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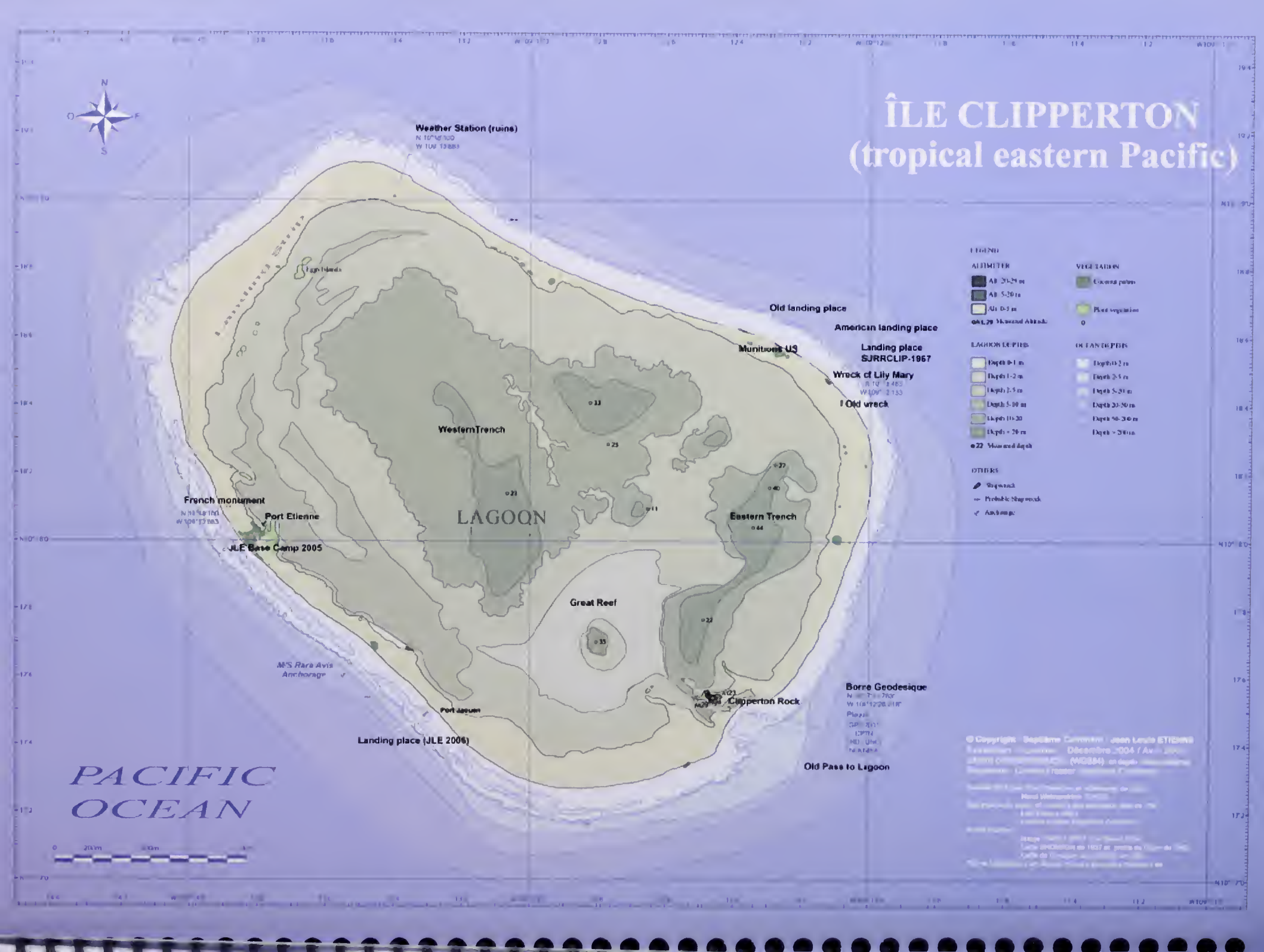
The Recent Molluscan Fauna of Île Clipperton (Tropical Eastern Pacific)

Kirstie L. Kaiser


ÎLE CLIPPERTON
(tropical eastern Pacific)
Weather Station (ruins)
Old landing place
American landing place
Landing place
SJRRCLIP-1967
Munitions US
Wreck of Lily Mary
Old wreck
WesternTrench
LAGOON
Eastern Trench
French monument
Port Etienne
JLE Base Camp 2005
Great Reef
M/S Rara Avis
Anchorage
Port Jaeum
Landing place (JLE 2006)
Clipperton Rock
Borne Geodesique
Old Pass to Lagoon
PACIFIC
OCEAN

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THE RECENT MOLLUSCAN FAUNA OF ÎLE CLIPPERTON (TROPICAL EASTERN PACIFIC)

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September 9, 2007

Clipperton 1994 EXPEDITION

Smithsonian Tropical Research Institute

expédition CLIPPERTON

Front Cover: Sunrise at Clipperton. Looking East-SE across the lagoon to Clipperton Rock. Photograph taken by Camille Fresser on 14 January 2005 at 7:49 a.m.

Front (inside) Cover: Bathymetric chart of Île Clipperton. Copyright: Septième Continent – Jean-Louis Etienne, Expédition Clipperton. Graphics: Camille Fresser, Septième Continent.

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THE RECENT MOLLUSCAN FAUNA OF ÎLE CLIPPERTON (TROPICAL EASTERN PACIFIC)

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Abstract:

Scientific expeditions to Île Clipperton were undertaken in 1994, 1998, 2005 and 2007 to investigate community compositions both on and around this uninhabited coral atoll. These studies have allowed a reevaluation of the molluscan biodiversity of the most isolated oceanic island of the tropical eastern Pacific (TEP). Prior to this current work, the last complete study (Emerson, 1994) listed a total of 92 mollusk species at Clipperton. The known molluscan taxa are herein significantly increased 210%, for a total of 285 species. This is assuredly an underestimate, especially for species inhabiting deeper water which has yet to be adequately sampled.

The majority of taxa are illustrated by photography and scanning electron microscopy. An inter-oceanic island biogeographic comparison and an annotated species list are included.

Figure 1. Aerial view of Île Clipperton from the southeast, taken from a commercial tuna seiner helicopter, January 2005. Photo: C. Fresser.

Introduction

Île Clipperton (Figures 1,2) is considered one of the five groups of remote oceanic islands of the tropical eastern Pacific (TEP) which are of particular biogeographic interest. These islands pose questions relating to dispersal and endemism in comparison to the other island groups of the TEP and tropical west American mainland fauna. To better understand the

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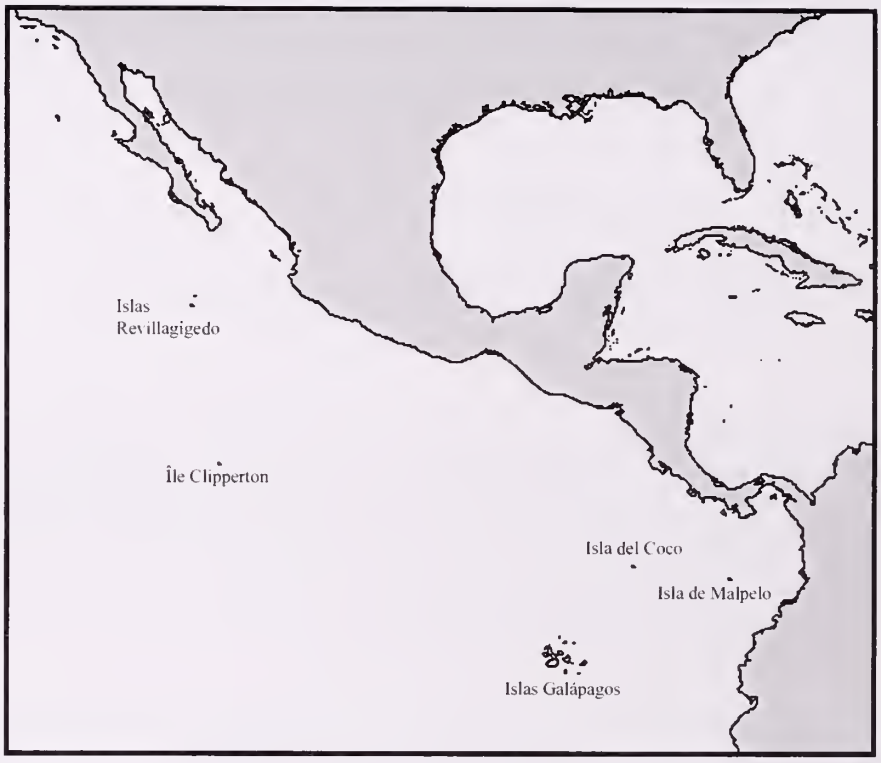

Figure 2. The five tropical eastern Pacific oceanic island groups. Map by D.L. Geiger.

nature of insular biota relative to immigration and distributions, Newman (1996) gave a historical review and insight into oceanic islands.

The five tropical eastern Pacific oceanic groups are: Islas Revillagigedo, México (18°N); Île Clipperton, French possession (10°N); Isla del Coco, Costa Rica (5°N); Isla de Malpelo, Colombia (3°N), and Islas Galápagos, Ecuador (0°) (Figure 2). They are all separated from the mainland by abyssal depths. Malpelo is closest at 435 km and Clipperton farthest at 1,280 km.

The molluscan fauna has been intensely studied in the Galápagos (Finet, 1994; Kaiser, 1993, 1997). Kaiser & Bryce (2001) published an extensive monograph on the mollusks of Isla de Malpelo. Two major papers have been published on the Islas Revillagigedo (Emerson, 1995; Reyes-Bonilla, 1999). A number of notable expeditions have visited Isla del Coco in the 1980s and 1990s, but only preliminary reports have appeared (Montoya, 1983; Shasky, 1983a, 1989a; Montoya & Kaiser, 1988; Chaney, 1992; Mulliner, 1993; Kaiser, 1998; J. Hertz & Kaiser, 1998a,b; Kaiser, 2001; Kaiser & C. M. Hertz, 2001).

A French possession, Clipperton is characterized by its extreme isolation, small size, and most importantly, low habitat diversity. These physical parameters have contributed to its greatly impoverished molluscan fauna in comparison to other TEP oceanic islands. First discovered in 1711 as "Isla de la Pasión" (Skinner & Schmieder, 1996), the only atoll of the tropical eastern Pacific, which is much nearer to the American mainland than to the nearest Pacific islands to the west, has long intrigued biogeographers. Collections of marine fauna including fishes (Allen, 1995, Robertson & Allen, 1996; crustaceans (Poupin et al., in press); corals (Glynn et al., 1996; Carricart-Ganivet & Reyes-Bonilla, 1999; Flot & Adjeroud, in press); echinoderms (Solis-Marin & Laguarda Figueras, in press) have revealed that both tropical eastern Pacific (Panamic Province) and substantial Indo-Pacific elements are represented.

In that Clipperton is the easternmost atoll of the vast area known as the East Pacific Barrier and the westernmost island of the tropical eastern Pacific, the high percentage of Indo-Pacific fauna (33.5%) is due to two factors. Firstly, the atoll is unique in that it is situated in an overlap zone of the Pacific Ocean and,

therefore, is the first land mass to be intermittently exposed to the North Equatorial Countercurrent from the west which brings source elements including planktotrophic larvae across the Barrier. The nearest atoll Pukapuka, in the Tuamotu Archipelago, is 4,280 km to the southwest and the closest island is Ua Huka of the Marquesas and is at a distance of 3,965 km.

Secondly, low habitat diversity of the atoll, which is mainly prolific coral cover, makes suitable habitats for these planktonic links from the west. Those source elements from the east on the North Equatorial Current encounter a lack of the coarse intertidal and subtidal environments of the coastal diversity. Clipperton lacks the rocky shores, mud and sand bottoms, mangroves, and such food sources as marine algae and other plants that are necessary to establish a hold and maintain viable populations for many west American mainland (TEP) taxa.

Physical Environment

Île Clipperton located at the nexus of the Panamic Province (10°18'N and 109°13'W), is somewhat characteristic of Pacific atolls having volcanic foundations. Where the top of the highest peak of the submarine Clipperton Ridge, described by Menard & Fisher (1958), reaches the surface of the sea, an egg-shaped coral reef supports a narrow, low, uninterrupted land strip of limestone debris with a single cavernous mass of altered trachyte rising to approximately 20 m (Clipperton rock) on the southeastern border.

Clipperton is a "near atoll," since a true atoll has no volcanic outcroppings. The small ring is 11.8 km in circumference, with only 1.7 square km of exposed land encircled by a healthy fringing coral reef (Figure 1). The lagoon, which makes up 85% of the atoll, is surrounded by a ribbon of land variable in width from 25 m to 320 m (pers. comm., John Munch, 2007). Beyond the wave-washed outer ring of the atoll are reef-flats lined by coral-sand beaches or cobble strands. From there, white ridges of unconsolidated limestone fragments (coral bits) reach a maximum elevation of four meters from where the land mass slopes down and encloses the sizeable (7.2 km square) central lagoon.

The lagoon has sediment of fine organic debris and hordes of minute biting isopods (*Cirolana* sp.) Poupin, pers. comm, 2007). Clipperton has a landing strip built in 1944 on the northwest side of the widest part of the atoll. The strip consists of coral pieces that are stained dark gray or black by microscopic algae and is not recommended for use today.

The following eight habitats are represented at Clipperton and environs:

(1) large deposits of storm-generated coral, with one extensive volcanic outcropping, bordering an intolerably low salinity lagoon (Figure 3),

Figure 3. Aerial view taken from the south of Clipperton Rock located on the edge of the lagoon, 2005. Photo: C. Fresser.

(2) a shallow, often tidally exposed reef front with low coral cover and abundant crustose coralline algae (Figure 4),

Figure 4. Tidally exposed reef front on west side of Clipperton, 2005. Photo: C. Fresser.

(3) a windward spur and groove zone with low coral cover in 2 to 10 m depth consisting mainly of *Pocillopora* spp. (Figure 5),

Figure 5. Aerial view of spur and groove formations on the west side of island, 2005. Photo: C. Fresser.

(4) a gently sloping 20 meter terrace of reef building corals, mainly *Porites lobata* (Figure 6),

Figure 6. *Porites lobata* on the 20 m terrace, 1998. Photo: D.R. Robertson.

(5) a coral-dominant zone, in pristine condition, beginning at or slightly below the wave base (15-20 m) and descending precipitously down to 40 to 55 m (Figure 7),

Figure 7. Pristine coral-dominated zone descending from the 20 m terrace that encircles the atoll, 2007. Photo: J. Stringer.

(6) a coralline sand and rubble slope starts at the end of the reef-building corals and goes to 60-70 m. It supports healthy colonies of black coral species (Figure 8),

Figure 8. Antipatharia sp. on coralline sand and rubble slope, 60-70 m, 2007. Photo: J. Bozanic.

(7) below 70 m the silty sand and rubble slope continues to decline to a maximum observed depth of 100 m with no black coral growth but with significant thermoclines (pers. comm., Jeff Bozanic, 2007),

(8) in the north-northeast sector of Clipperton is a 60 m terrace that is 1,200 m off shore (Glynn et al., 1996).

Clipperton's brackish-water lagoon, which reaches depths to 90 m ("le trou sans fond", the bottomless hole)

was most likely closed off by severe storm alterations between 1839 and 1858 (Sachet, 1962b). According to Skaggs (1989), the southern entrance to the lagoon was closed before 1861. The greenish, murky lagoon is complete with dead coral reefs consisting of *Pocillopora* spp. and *Porites* spp. several meters in thickness indicating active reef growth in the recent past.

At least three species of marine fishes and several plant species are thriving in the surface lagoon waters as of 2007. Beginning at 12 to 15 m the water quality changes from a plankton rich environment to water containing high concentrations of hydrogen sulfide. Below the density interface (18-34 m) can be found a layer of gelatinous organic material which is quick to make the visibility go to zero if disturbed (Figure 9).

The low salinity of the present day lagoon is a result of its isolation from the sea; only large storm waves wash into it, and there is dilution due to high rainfall during the summer and fall seasons. This stagnant body of water supports the common gallinule, the only non-seabird that breeds on Clipperton, and the abundant aquatic plants along some areas of the shore which help maintain the large land crab population (Figure 10).

Figure 9. Jeff Bozanic, at 34 m, reaching into gelatinous layer of the Clipperton lagoon, 2007. Photo: J. Bozanic.

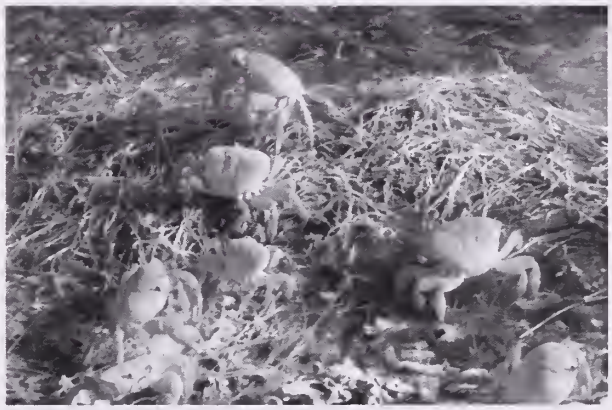

Figure 10. Clipperton's large population of land crabs feeding on the lagoon plant life, 2005. Photo: S. Hourdez.

Clipperton has a seasonably humid tropical climate. Very few data had ever been collected until the Jean-Louis Etienne Expedition in 2004-2005.

Rainfall is very high during the month of October and continues until December. Severe thunderstorms were noted in March, April (pers. obs., Kaiser, 2007), and May (Figure 11). Storms and occasional hurricanes come from the north and are known to devastate the island.

Figure 11. Lightning striking over Clipperton Rock, April 2007. Photo: H. Donenfeld.

Though once completely barren, Clipperton now has large groves and isolated individual coco palms, presumably descendants of trees that were planted in the early 1900s by a Mexican garrison (Figure 12).

Figure 12. Aerial view of largest coco palm stand on Clipperton showing 2005 French Expedition camp site. Photo: C. Fresser.

Malacological History of Clipperton

Discovered in 1527 by the Spanish captain Saavedra Cerén, Clipperton has been claimed at one time or another by the United States, France, México (González Avelar, 1992) and England. The island has been called L'île de Passion and several other names by mapmakers. The origin of Clipperton's current name dates to 1705 when an English pirate, John Clipperton, went ashore.

During the past century, the isolated, uninhabited coral atoll of Clipperton has been visited by several prominent expeditions. Here I mention those studies relating to the molluscan fauna, either in museum collections, published or in preparation.

Sachet (1962c) indicated that the first mollusks reported from Clipperton were mentioned by John T. Arundel in 1897 in a San Francisco newspaper article. They were described as pearl oyster shells without specific names but most likely they were *Pinctada mazatlanica* (Hanley, 1856), which occurs at Clipperton (Plate 2, figures 6a,b). Sachet (1962b) also mentioned that a "group of shells" in the USNM were received in 1897 from a Mr. Arnheim, a ship chandler who obtained them from sailors.

Possibly the first mollusks collected for scientific study were gathered by Washington Henry Ochsner, a member of the shore party on 10 August 1905 from the schooner *Academy* on a voyage of the California Academy of Sciences (CAS) to the Islas Galápagos (Slevin, 1931). In the few hours on Clipperton, eleven species were taken by Ochsner. Hertlein (1937) reported on them and figured six species.

Dall (1910) mentioned three species of *Conus* from Clipperton. The specimens are located in the Recent mollusk collection of the National Museum of Natural History, Smithsonian Institution (USNM) and are from the 1897 Arnheim Collection and the CAS voyage of 1905 (pers. comm., P. Greenhall, 2006).

Bartsch and Rehder (1939) reported on 12 species occurring at Clipperton. Five were described as new and had been collected on and among the rocks by W. L. Schmitt (USNM) in May 1938 while on the "Presidential Cruise" aboard the U.S.S. *Houston*.

The U.S. Navy Electronics Laboratory "Shuttle Expedition" in May 1952 did only incidental scientific research, but it produced the first deep-water specimens from Clipperton. Hertlein and Emerson (1953) documented 31 previously recorded species, and added five records to the malacofauna including one new species. The new records were collected from the Expedition's two dredge hauls from 183-367 m off Clipperton's east slope.

During the early 1950s, at the beginning of his career, William K. Emerson, now *emeritus* of the American Museum of Natural History in New York, took a special interest in the zoogeographic study of mollusks having Indo-Pacific faunal affinities and their migration to the tropical eastern Pacific. His first paper on the subject was co-authored with Hertlein when they were both working in the San Francisco Bay area (Hertlein & Emerson, 1953). Throughout Emerson's distinguished career in malacology he continued to pursue answers to the questions of what, why and how mollusks came from the west across the great Pacific Ocean (Emerson, 1967, 1968, 1978, 1982, 1989, 1991, 1993; Zinsmeister & Emerson, 1979).

According to Hertlein and Emerson (1957), on 12 December 1954 three members of the Scripps Institution of Oceanography (SIO) "Acapulco Trench Expedition" landed on the atoll from the research vessel *Spencer F. Baird*. In only a few hours they managed to collect 14 species of mollusks, including two new records, from beach drift and the intertidal zone. They reported no living marine invertebrates in the lagoon.

During the second and third International Geophysical Years, Scripps Institution of Oceanography carried out a number of research cruises. The first expedition landed and stayed 20-26 October 1956 followed by another eight-week expedition in August - September 1958. American scientists participating in the

1958 "Doldrums Expedition" aboard the research vessel *Spencer F. Baird,* focused mainly on sea and weather conditions. A number of biologists were left for two and a half weeks (7-26 August 1958) to study the flora and bird fauna of Clipperton. The year 1958 was a new era for scientific collecting because SCUBA was used for the first time at Clipperton. The maximum depth was 40 m and diving at all depths was seriously restricted by the necessity to use a shark cage for protection from the prolific shark population (Figure 13). Emerson (1993) recounted a harrowing tale from Carl L. Hubbs (SIO) (*in litt.* to Charles M. Breder, 14 March 1957) as follows: "The outer margin [of Clipperton] is so excessively full of sharks, the collectors are not very anxious to work there. The sharks were so numerous that they actually bit the oars of boats being rowed along the shore, and paid very little attention to shark repellent. In fact one of them came in and swallowed the bag of repellent that was used in a vain effort to get in collecting at a certain spot."

Figure 13. Silky shark off Clipperton, 1994. Photo: J. Black.

Allison (1959), one of the "Doldrums Expedition" scientists, reported on the occurrence and habitat of five species of *Conus* found at the Island. Following that, Hertlein and Allison (1960a) listed 12 species of *Cypraea* that were primarily collected on the 1956 and 1958 Expeditions. A third contribution in the series by Hertlein and Allison (1960b) listed 34 species and included all other mollusk family representatives collected on the two Expeditions.

A remarkable scientist on the "Doldrums Expedition" was Marie-Hélèn Sachet, a French botanist. Sachet was charged with making a comprehensive survey of life on the atoll and made significant contributions in studying the geology and the marine and terrestrial flora and fauna of Clipperton, including the most comprehensive list of mollusk species for that time (Sachet, 1960, 1962a-c, 1963). During the 19-day stay on the island, 58 pigs, which had been introduced at the end of the 19th century, were eradicated. Their thought was to give the marine bird populations (Figure 14), land crabs (*Gecarcinus planatus*) (Figure 15), and other fauna a better chance of survival.

Figure 14. Masked boobie pair with chick (*Sula dactylatra*) and persistent land crab, 2005. Photo: C. Fresser.

Figure 15. Bright orange *Gecarcinus planatus* Stimpson, 1860, moving boobie egg to its lair, 2005. Photo: J.-M. Bompar.

Eight years after its first visit, SIO's R/V *Spencer F. Baird,* during the "Carrousel Expedition" of 1964, brought up mollusks during dredging operations around Clipperton. Hertlein & Allison (1966) reported on 35 species from the 92-meter dredge hauls, along with all other mollusks recognized in Clipperton collections that had not been previously inventoried. Unfortunately, the present repositories of the specimens are unknown.

Still examining unidentified material collected on

the 1958 Expedition, Hertlein and Allison (1968) described six new species, of which five are here considered valid. They also reviewed three previously described mollusks and discussed one unnamed species of the genus *Omalogyra* (Plate 36, figures 7a-c), which occurs at all of the TEP oceanic islands and remains without a specific name to this day.

Beginning in 1966 and reaching completion in 1968, the French Centre de Recherches du Service de Santé des Armées (Research Center of the Health Service of the Armies) pursued the natural history of Clipperton on four "Mission Bougainville" Expeditions. From those Expeditions, Salvat and Ehrhardt (1970) listed 89 species of mollusks, noting their biogeographic affinities and commenting on ten of those more extensively. Salvat & Salvat (1972) brought the number to 90 by adding the bivalve *Pinna rugosa* Sowerby, 1835 (Plate 3, figure 6) to the list.

In order to answer a number of urgent questions for the French government about developmental schemes for Clipperton, several preliminary expeditions were sent to Clipperton between 1975 and 1980. Jacques Cousteau, chief scientist Pierre-Marie Niaussat, plus 23 others aboard *Calypso*, lived on and studied the island for six weeks in 1980. The scientific team focused mainly on the brackish-water lagoon (diving to 40 m) and to a lesser degree, on the bird and the ubiquitous land crab populations which had flourished after the feral pigs had been exterminated in 1958. Several beach worn mollusks were collected by Spencer Luke (SIO), one of the Expedition scientists and remain in the Scripps Institution of Oceanography Collections. Other than sport and commercial fishermen (Figure 16) landing on Clipperton and some reporting their beach finds (Perrin, 1977; Schneider, 2004), Clipperton had a lull in visitors, especially from the scientific community, for the next 17 years.

In 1992, under the auspices of the Santa Barbara Museum of Natural History, I initiated a scientific expedition co-organized with John D. Jackson (Appendix 4). We specifically designed the trip to explore the submarine environs of Clipperton with SCUBA, limited dredging and tangle net deployments. In April 1994, 22 members of the "Clipperton 1994 Expedition" departed San Diego, California. Five members of the 22 participants logged over 160 hours of diving for mollusks (Chaney, 1994; Appendix 4, figure 26). The research team examined virtually all parts of the island while living and diving from the M/V *Royal Star*. With renewed interest, and prior to the 1994 Clipperton Expedition, Emerson (1994) researched the

Figure 16. Mexican commercial tuna seiner off Clipperton's west side during inclement weather, 2005. Photo: C. Fresser.

museum collections and literature in order to compile the most comprehensive zoogeographic summary of Clipperton mollusks to that date. The inventory included 92 species composed of 70 gastropods and 22 bivalves. Following the "Clipperton 1994 Expedition," Small (1994, 1995) and Beals (1995), participants of the mollusk team, did initial reports of our findings.

Three years later, aboard the R/V *El Puma*, the "SURPACLIP-I" cruise organized by the Universidad Nacional Autónoma de México made a short visit to the island from 23 to 25 November 1997 as part of their oceanographic expedition. Researchers Carricart-Ganivet and Reyes-Bonilla (1999) presented a complete study of the scleractinian corals, but the few mollusks collected on Clipperton were unfortunately lost in the mail en route from the Natural History Museum of Los Angeles County (pers. comm., H. Reyes-Bonilla, 2007).

In 1998, Dr. D. Ross Robertson from the Smithsonian Tropical Research Institute, Panamá (STRI), a participant in the 1994 Expedition, organized the "STRI Clipperton Expedition" taking the Institute's research vessel, the R/V *Urracá* to Clipperton. Departing from Acapulco, México (Appendix 4), while living aboard the R/V *Urracá* from 17 April to 10 May, I was one of eight scientists. We collected, using SCUBA and otter trawl, and carried out field observations mostly concentrating on the fish fauna.

The French "Expédition Clipperton" organized by Jean-Louis Etienne, was by far the most serious effort to assess the molluscan fauna of Clipperton. The object-

tive of this land-based Expedition from December 2004 to April 2005 was to explore and observe the land and marine flora and fauna and to study the lagoon and environment of the island (Charpy, L., [editor], in prep. *Clipperton: environnement et biodiversité d'un microcosme océanique*).

The participants and provisions were shuttled 1,230 km to and from Acapulco, México to Clipperton by the motor schooner *Rara Avis* on a revolving schedule every three weeks (Appendix 4). Land-based accommodations were set up, and during the rotations, scientists lived and worked on and from land. The Island was temporarily transformed into a biological laboratory and

Figure 17. Author working up material in temporary wet lab, 2005. Photo: S. Hourdez.

offered excellent working facilities (Figures 17, 18).

I participated in the 13 January through 1 February 2005 rotation researching and collecting marine and terrestrial mollusks with participants from the Muséum national d'Histoire naturelle, Paris, and other French institutions. We were diving to depths of 55 m, utilizing airlift pumps which generated an unprecedented volume of material. Techniques including limited algal shakings and coral brushings supplemented the samples which were described by Bouchet et al. (2002) from their work in New Caledonia. The three lagoon dives and some intertidal collecting added additional mollusk records, over 33 in all.

Two years later Alicia Hermosillo (opisthobranchs), Pedro Medina Rosas (corals) and I were part of the "Expedition Île Clipperton 2007" aboard the M/V *Nautilus Explorer* (Appendix 4), which included three extra diving days at the Islas Revillagigedo. Six days from 14 to 20 April 2007 were spent at Clipperton. Very little intertidal work was done because of high

Figure 18. Port Jaouen (diving operations) in front of landing site, 2005. Photo: S. Hourdez.

Figure 19. Pedro Medina Rosas, Alicia Hermosillo and the author on stern of the M/V *Nautilus Explorer*, 2007. Photo: R. Chávez Arce.

breakers from the inclement weather which made landing both times on the island very hazardous. Among the three of us, a total of 18 dives with SCUBA were made in search of new mollusk records (Figure 19).

A concerted effort was given to the opisthobranch fauna of the island which added four new records to the faunal list. For the first time at Clipperton, divers used

rebreathers for collecting from 46-91 m (150-300 ft) off the fringing reef where a number of new records were discovered. I was not able to process the micro-material collected within a timely manner for inclusion in this manuscript, although most of the larger species records for 2007 are noted in Appendix 1. The complete opisthobranch data gathered by Alicia Hermosillo and others are included herein. An addendum is planned for the remainder of the mollusks in the near future.

Materials and Methods

In the course of the four expeditions, more than 133 stations were sampled on and around Clipperton between the high tide mark and 113 m depth. The most prolific amount of material was collected by using SCUBA (2 to 91 m). Other methods included four productive dredge hauls from 109 to 113 m (1994 and 1998) and two successful deployments of tangle nets, one at 49 m (1994) and one at 63 m (1998). There was one productive benthic grab at 92 m (Figure 20) and many hours of intertidal sampling by hand around all sections of the island. A total of seven dives between 10 m and 38 m were done in the lagoon during the 2005 and the 2007 expeditions (Appendix 4, figure 26).

Collecting methods used while diving included: hand picking with the naked eye; brushing and shaking dead coral and rubble into a canvas bag (Figure 21);

Figure 21. The author using the canvas-bag method for collecting micro-mollusks. Photo: J. Bozanic.

breaking hard corals for boring organisms (usually done inadvertently by the anchor chain) and suction sampling. The suction method was used exclusively in 2005, and the technique involved a two-meter long aspirator powered by a generator. The attached lift bag was then deployed to bring the samples to the surface. Special

Figure 20. Pedro Medina Rosas and the author using the benthic grab successfully for the first time at Clipperton, 2007. Photo: R. Chávez Arce.

attention was given to associations between mollusks and various invertebrates, particularly echinoderms and scleractinid and anthozoid corals. In all, approximately 350 man hours were spent searching for mollusks while on the four expeditions (Figure 26). Many hundreds more hours were spent in the laboratory sorting, cataloging and imaging the specimens.

Field samples were processed fresh by sieving in seawater and fractioning to size classes down to 0.5 mm. Fractions over 5 mm were sorted and placed in 95% EtOH and later individually sorted, cataloged and preserved in 95% alcohol or dried with animal if live collected. The smallest samples (under 0.5 mm) were washed in fresh water and dried for later sorting with a dissecting microscope and then cataloged.

The opisthobranchs (excluding the holoplanktonic families) were either photographed in situ or "tub shots" were taken later. Most of the larger voucher specimens were photographed at the SBMNH with a Nikon D1X digital camera while the smaller specimens (<5 mm) were imaged there with the Zeiss EVO40XVP (SEM).

Abbreviations

AHF, Allan Hancock Foundation, [now at LACM], Los Angeles, California
AIMS, Australian Institute of Marine Science, Townsville, Queensland
AMNH, American Museum of Natural History, New York, New York
BMNH, The Natural History Museum, London
BPBM, Bernice P. Bishop Museum, Honolulu, Oahu, Hawaii
CAS, California Academy of Sciences, San Francisco, California: [CAS-MPTC; CAS-PTC; CAS (DGTC); CAS (MHNP); CAS (GTC), acronyms from the older literature, no longer in use (pers. comm. R. Van Syoc, 2007)]
CASIZ, California Academy of Sciences Invertebrate Zoology
CNRS, Centre National de la Recherche Scientifique
CSU, California State University, Fullerton
Det. identity determined
EtOH, ethyl alcohol
H_2O, water
In prep., in preparation
JLE, Jean-Louis Etienne Expédition Clipperton, 2004-2005
KLK Coll., Kirstie L. Kaiser Collection
L, left valve
LACM, Natural History Museum of Los Angeles County, California
Leg., collector
M.A., Museum Associate
MCZ, Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts
MNHN, Muséum national d'Histoire naturelle, Paris, France
M/S, Motor Schooner
M/V, Motor Vessel
NSF MRI, National Science Foundation Magnetic Resonance Imaging
POV, point of view [a cinema term]
R, right valve
RSMAS, Rosenstiel School of Marine & Atmospheric Science, University of Miami, Florida
RU, Rice University, Houston, Texas
R/V, Research Vessel
SBMNH, Santa Barbara Museum of Natural History, California
SCUBA, Self Contained Underwater Breathing Apparatus
SDNHM, San Diego Natural History Museum, California
SEM, Scanning Electron Microscope (Microscopy)
SI, Smithsonian Institution, Washington, D.C.
SIO [SIO-BI], Scripps Institution of Oceanography, [Benthic Invertebrates], La Jolla, California
SMNH, Swedish Museum of Natural History, Stockholm
STRI, Smithsonian Tropical Research Institute, Panamá
S/V, Sailing Vessel
TEP, Tropical Eastern Pacific
UCMP [UCMP-ITC (Invertebrate Type Collection)], Museum of Paleontology, University of California, Berkeley, California
UCSB, University of California, Santa Barbara, California
U de G [CUC], Universidad de Guadalajara [Centro Universitario de la Costa]
U of H, University of Houston, Houston, Texas
U of M, University of Miami, Miami, Florida
U of T, University of Texas Marine Science Institute, Port Aransas, Texas
UNAM, Universidad Nacional Atónoma de México, México, D.F.
USNM, National Museum of Natural History, Smithsonian, Washington, D.C.
WAM, Western Australian Museum, Perth, Western Australia

Discussion

Appendix 1 is a detailed inventory of the molluscan species found at Clipperton including the last four expeditions. The species were identified based on specimens in the Kirstie L. Kaiser reference collection and many museum collections, especially the Santa Barbara Museum of Natural History. Select specimens were sent out to specialists as indicated in the acknowledgments. Many specimens could not be identified with certainty to species-level.

The micromollusks (< 5 mm) were the most difficult group as most families are poorly known with the last revisions dating to the late 19th and early 20th centuries. Juvenile specimens were also difficult to identify; in several instances, the species-specific characters only develop later in their ontogeny. The species are identified here to the most accurate taxonomic level possible.

The Scissurellidae are illustrative of the problems of identification. A single species, *Sinezona rimuloides* Carpenter, 1865, had been known to occur at Clipperton since 1994 (Kaiser, unpublished data). It was identified as the only known species in the family from this region until Geiger (pers. comm., 2006) recognized two additional species; one he described as *Scissurella kaiserae* Geiger, 2006, and the other one is in the process of being described (Geiger, unpublished data). The Scissurellidae sp. 1 record in Appendix 1 is based on two broken specimens from the University of California, Berkeley Collection. The positive identification of the specimen is under study using scanning electron microscopy.

A second taxonomic problem arose with *Chama rubropicta* Bartsch & Rehder, 1939. It had been synonymized under *C. buddiana* C. B. Adams, 1852, by Keen (1971). Bernard (1976) identified two *Chama* species at Clipperton: *Chama squamuligera* Pilsbry & Lowe, 1932, and *Chama buddiana* (= *C. rubropicta*). Of the two species of *Chama* that are found at

Clipperton, the species with red to orange coloration is distinct from both *C. squamuligera* and *C. buddiana* from the Golfo de California and the continental coast of west America. I consider these specimens from Clipperton to be *Chama rubropicta* and it is here reinstated as a valid species.

The bivalve fauna is dominated by species that attach to hard substrata or are boring therein. There is a notable lack of infaunal bivalves which constitute the majority of species in most marine environments. The total of 36 bivalve species found at Clipperton are reflective of the particular substrata encountered. The two infaunal species in Lucinidae were recovered from the lagoon as empty shells; they are remains of species that thrived at a time when the lagoon was open to the ocean and fully marine as opposed to the brackish condition encountered today. Records of *Rochefortina sandwichensis* (Smith, 1885) and *Streptopinna saccata* (Linnaeus, 1758), in conjunction with *Codakia punctata* (Linnaeus, 1758) show a biogeographic connection with the Indo-Pacific islands. The majority of the 28 identified bivalve species are from the Panamic Province.

The seven identified species of Vetigastropoda show mostly Panamic affinity with the exception of *Diodora granifera* (Pease, 1861) chiefly known from Hawaii. The most diverse group within Vetigastropoda is Trochoidea with approximately 3,000 species worldwide (Geiger & Thacker, unpublished data) though only five species have been recorded from Clipperton. Compared to the four species of Fissurellidae (606 worldwide: Geiger et al., in press) and four nominal taxa in Scissurellidae (170 worldwide: Geiger et al., in press) the low diversity of Trochoidea is remarkable. There seems to be an inverse proportional relationship between diversity and body size. The overall body-size sequence is from the smallest Scissurellidae to the intermediate-sized Fissurellidae to the rather large Trochoidea. Among Trochoidea the species found at Clipperton are rather small in size for the group.

Only two species of Neritoidea have been collected at Clipperton (Neritidae, Plate 12, figures 1a-b; Phenacolepadidae, Plate 12, figures 2a-c). Species in this group occur mostly in the high intertidal and dysaerobic environments. The intertidal of Clipperton is essentially non-existent, with strong wave action hampering the colonization of the substratum by epifaunal species. This explains the low number of species in this low-diversity group.

The Caenogastropoda, to the exclusion of Neogastropoda, comprise 114 species. Four intertidal species in Littorinidae have been encountered, half from the Indo-Pacific fauna, half from the Panamic fauna. A rich assembly of microshells were collected predominantly on the underside of rocks, and as empty shells. Species in the Epitoniidae (Plate 18) and Eulimidae (Plates 19, 20) are parasites on sea anemones and echinoderms, respectively (Plate 43, figure 6), (Figure 21). In most, the host-parasite relationship has not been documented, which makes identification more difficult. The species diversity of Eulimidae is surprisingly high. Infaunal species are rare, with two of the four Naticidae (Plate 23) only tentatively assigned to that family. The diversity of Cypraeidae (Plates 24, 25) is high, most likely owing to their long dispersal capability as teleoplanktic, planktotrophic veliger larvae. Most Clipperton Cypraeidae seem not to have established populations because their records stem from empty shells. Of the 51 caenogastropod species identified to species level (excluding the holoplanktonic families), 29 are members of the Indo-Pacific malacofauna, 21 are Panamic and 1 western Atlantic.

Figure 21. Two *Melanella dufresnei* parasitizing a sea cucumber. This species of holothurian is the most common at Clipperton, 1994. Photo: R.B. Herrmann.

Species in the Janthinidae, Atlantidae, Carinariidae and Pterotrachaeidae among the Caenogastropoda and Pteropoda (Cavoliniidae and Limacinidae) among the Opisthobranchia, have a holoplanktonic life style. They all have broad geographic distributions, hence their records do not assist in determining the faunal affinity of Clipperton.

The 61 Neogastropoda represent the predator guild of the marine fauna. The Muricidae (Plates 28, 29) is the second most diverse faunal element and contributes some of the largest-shelled species collected. Coralliophilinae (Plates 30, 31) are specialized consumers of live coral tissue, and are particularly

diverse at Clipperton. Infaunal neogastropods are rare at Clipperton such as the single deeper-water species of Nassariidae (Plate 33, figures 1a-b, 2). Of the 50 taxa identified to species level, 22 are from the Indo-Pacific faunal region, while the remaining 28 are known from the Panamic Province.

The Heterostropha contain 20 taxa, of which six could be identified to species level; one of those belongs to the Indo-Pacific fauna, while the remaining five are Panamic. The diversity of Architectonicidae (Plate 37) seems high, while the Pyramidellidae (Plates 38, 39) show levels of diversity comparable to other TEP oceanic islands.

The Opisthobranchia (sea slugs) are represented by 35 species. Of the 13 taxa identified to species level (excluding the circumtropical holoplanktonic families), ten are circumtropical or from the Indo-Pacific region, while three belong to the Panamic fauna. The mostly infaunal Cephalaspidea (Aglajidae) is represented with a single species, *Navanax aenigmaticus* (Bergh, 1894), which atypically, for the order, is an epifaunal species on hard substrata. The herbivores (Plakobranchidae, Aplysiidae) as well as spongivores (Umbraculidae, Chromodorididae, Discodorididae, Dendrodorididae) and species feeding on anthozoans (Aeolidiidae, Tergipedidae) are represented at Île Clipperton.

Only two pulmonate land snails (Plate 41, figures 3, 4) have been recorded: *Opeas oparanum* (Pfeiffer, 1846) and *Succinea atollica* Hertlein & Allison, 1968, the latter described from Île Clipperton. At present, neither species can be found on the island, although both species were common in 1958. I suggest that, perhaps, the land snail populations were negatively affected by the feral pigs and later, to the point of extinction, by the millions of land crabs. Although land snails were reportedly abundant in 1958 (Sachet, 1962c), no subsequent expeditions have encountered them, either living or as empty shells.

A single small chiton species described from Isla del Coco, Costa Rica, as *Ischnochition victoria* Ferreira, 1987, was occasionally encountered living on coralline algae at Clipperton (Plate 43, figures 7, 8).

The Cephalopoda are particularly problematic. *Octopus* spp. and some *Octopus* spp. paralarvae were collected during the last four Expeditions. Museum holdings contain approximately three to six species, the identity of which can not be further ascertained because a critical review of the region's cephalopod fauna is wanting (pers. comm., F. G. Hochberg, 2007).

The taxa listed from Clipperton (Appendix 1) are predominantly small-bodied species. In some cases specimens collected at Clipperton are notably smaller compared to those collected at the other rocky TEP oceanic islands. For example, the muricid *Tribulus planospira* (Lamarck, 1822) usually grows to 60-70 mm, but at Clipperton a maximum size recorded for a mature specimen is 41 mm. The turrid *Clathurella rigida* (Hinds, 1843) usually grows to 8 mm but only attains a size of 4.7 mm at Clipperton. But some of the larger-bodied species, such as *Cypraecassis tenuis* (Wood, 1828) and *C. coarctata* (G.B. Sowerby I, 1825) are of comparable size to specimens found on the other TEP islands. In a single case, a world-record size specimen (60.9 mm) of *Mauritia scurra* (Gmelin, 1791) was collected at Clipperton (Kaiser, 1999). However, Clipperton specimens are generally smaller than those from other populations.

In an odd error, Dall & Ochsner (1928) noted a "strictly Indo-Pacific" fauna on México's Isla Clarión of the Revillagigedo group, but this seems to have been a mistake for Clipperton, because the fauna of Clarión is mainly tropical eastern Pacific (Hertlein, 1937; Kaiser, pers. obs.).

Conclusion

The Clipperton molluscan fauna as presently known consists of 285 species, of which 182 are here reported for the first time. The majority of species forming new records are illustrated herein. In some cases, newly collected material of better specimens has permitted the identification of formally *incertae sedis* species and some previously misidentified.

From the statistics derived in Appendices 1 and 3, the malacofauna of Île Clipperton, identified to species level, is: tropical eastern Pacific (Panamic) (37.7%); Indo-Pacific (33.5%); inter-island endemics (8.9%); circumtropical (16.2%); endemic (2.6%) and western Atlantic (1.0%). Species with long dispersal stages are more numerous, and the species composition strongly reflects the limited hard-substrate biomes available at Île Clipperton.

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APPENDIX 1: AN ANNOTATED TAXONOMIC COMPILATION OF THE RECENT MOLLUSCAN FAUNA OF ÎLE CLIPPERTON

Appendix 1 represents a total of at least 285 generally accepted records, including: 36 Bivalvia, 248 Gastropoda (2 Pulmonata), 1 Polyplacophora, and an undetermined number of Cephalopoda. There are 42 species that are considered either spurious, doubtful or have been synonymized and are listed in Appendix 2 (rejected records). A review of the zoogeographic affinities of the taxa can be found in Appendix 3.

The following checklist consists of three columns. The first contains both the plate and figure number(s) for each species illustrated. The second column is a comprehensive list of each taxon and author. The classification system has been followed as outlined in Keen (1971), and updated by Skoglund (2001, 2002), Ponder & Warén (1988), Vaught (1989), Meyer (2003), Abbott (1989) and Geiger & Thacker (unpublished data). The third column, Literature Sources/Remarks, has as its first entry the initial published record, often with type number or collection number entry for each species known to occur at Clipperton. Following in chronological order are Clipperton references that have been cited for each taxon. References in bold denote that the authors cited have examined/collected the material. References not in bold indicate that the cited records are from previous sources, either published or in collections. A plus sign (+) after a collections number indicates that there are too many lot numbers to list. Photographic image references and additional records with institution and private collection numbers are included.

Under Remarks the years noted are from one or more of the four expeditions (1994, 1998, 2005, 2007) during which the species was collected. Condition when found is also noted: empty shell or live animal and if preserved in 95% EtOH (wet collection).

Plate/ Figure(s)	List of Species	First Authority Literature Sources/Remarks
	BIVALVIA	
	PTERIOMORPHA	
	ARCIDAE	
---	*Arca* (*Arca*) *mutabilis* (Sowerby, 1833)	**Hertlein & Allison, 1966** (left valve, beach deposit); Salvat & Ehrhardt, 1970; Bernard, 1983; Bernard et al., 1991; Emerson, 1994, 1995. Remarks: This record was established from a single beach-deposit valve and one juvenile valve dredged in 1956-1958 by E. Allison.
Pl. 1, figs.1a-c	*Acar gradata* (Broderip & Sowerby, 1829)	SBMNH 353524 (voucher), 358547; MNHN; KLK 201214-201218, 201220-201221 (voucher), 210380-210381. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live.
Pl. 1, figs.2a-b	*Barbatia* (*Cucullaearca*) *reeveana* (d'Orbigny, 1846)	**Hertlein & Allison, 1966** (single specimen, R&L valves, beach deposit); Salvat & Ehrhardt, 1970; Bernard, 1983; Bernard et al., 1991; Emerson, 1994; KLK 210382 (voucher). Remarks: Collected as empty shells in 2005 and 2007.
Pl. 1, figs.3a-b, 4	*Barbatia* sp. 1	As *Acar* cf. *A. laysana* Dall, Bartsch & Rehder, 1938, in **Hertlein & Allison (1966)** (single live specimen in coral niche, 5 mm), Emerson (1978); as *Barbatia hawaiensis* Dall, Bartsch & Rehder, 1938, in Bernard (1983); Bernard et al., 1991; Emerson, 1994; SBMNH (live) 210438; LACM 58-7 (empty shell); MNHN; SIO M1496 (live);

	Barbatia sp. 1 (continued)	KLK 201219, 201222-201229 (voucher), 201230-201232, 210383-210391 (voucher). Remarks: Collected in 1994, 1998, 2005 and 2007. Several specimens were found live and preserved in KLK wet collection. Kay (1979) synonymized *laysana*. The single live-collected specimen of "*laysana*" Hertlein & Allison (1966) is believed to be *Barbatia* sp. 1 herein. See Appendix 2 for *Acar laysana*. This is by far the most common of the Clipperton arcids.
PHILOBRYIDAE		
Pl. 2, fig.1	*Philobrya* sp. 1	KLK 201233 (voucher). Remarks: Collected in 1998, this single valve is reddish in color and has a smaller hinge plate than *P. setosa* (Carpenter).
MYTILIDAE		
Pl. 2, fig.2	*Lithophaga* (*Diberus*) *plumula* (Hanley, 1843)	**Hertlein & Allison, 1966** (live, common); Salvat & Ehrhardt, 1970; Bernard, 1983; Bernard et al., 1991; Emerson, 1994; Coan et al., 2000; KLK 201234-201235 (voucher, broken). Remarks: Collected in 1998. One or more specimens were found live.
Pl. 2, figs.3a-d	*Lithophaga* (*Stumpiella*) *calyculata* (Carpenter, 1857)	**Hertlein & Allison, 1966** (single well-preserved specimen, dredged, 92 m); Salvat & Ehrhardt, 1970; Bernard, 1983; Bernard et al., 1991; Emerson, 1994, 1995; KLK 201242-201243 (voucher). Remarks: ?Empty shells collected in 1998 in lithothamnion nodule, dredged, 62 m.
Pl. 2, figs.4a-b	*Leiosolenus laevigata* (Quoy & Gaimard, 1835)	As *Lithophaga hancocki* Soot-Ryen, 1955, in **Hertlein & Allison (1966)** (live), identified with reservation (single valve) in **Salvat & Ehrhardt (1970)**, Bernard (1983), Bernard et al. (1991), Emerson (1994); MNHN; KLK 201238-201240 (voucher), 201241, 210392-210393. Remarks: Collected in bore holes of *Pavona* and *Porites* spp. in 1994, 1995, 2005 and 2007. One or more specimens found living in coral and preserved in KLK wet collection. Largest specimen 42.8 mm.
Pl. 2, fig.5	*Septifer zeteki* Hertlein & Strong, 1946	MNHN; KLK 201236 (voucher), 201237, 210394-210395. Remarks: Collected in 1994 and 2005. No live specimens have been found.
PTERIIDAE		
Pl. 2, figs.6a-b	*Pinctada mazatlanica* (Hanley, 1856)	**Hertlein & Allison, 1966** (live; empty shells in sediment of lagoon); Salvat & Ehrhardt, 1970; Bernard, 1983; Bernard et al., 1991; Emerson, 1994; KLK 201248-201253 (voucher), 201254, 210109. Remarks: Collected in 1994, 1998, 2005 and 2007. Several specimens found live and preserved in KLK wet collection.
ISOGNOMONIDAE		
Pl. 3, fig.1	*Isognomon* (*Melina*) *janus* Carpenter, 1857	**Hertlein & Allison, 1966** (live); Salvat & Ehrhardt, 1970; Bernard et al., 1991; Emerson, 1994, 1995; SBMNH 353418 (voucher, live, wet collection); SDNHM 42917 (empty shells); KLK 201255-201266, 201268-201272. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection.
Pl. 3, figs.2a-c	*Isognomon* (*Melina*) *recognitus* (Mabille, 1895)	As *Isognomon chemnitzianum, auctt., non* d'Orbigny, 1853, in **Hertlein & Allison (1966)** (live, beach deposits), **Salvat & Ehrhardt (1970)**; as *I. quadratus* (Anton) in Bernard et al. (1991); as *I. gaudichaudi* (d'Orbigny) in Emerson (1994); Emerson, 1995;

	Isognomon (Melina) recognitus (Mabille, 1895) (continued)	SDNHM 42917 (empty shells); KLK 201267 (voucher). Remarks: Collected in 1998 and 2005. One or more specimens found live and preserved in KLK wet collection.
MALLEIDAE		
Pl. 3, figs.3, 4a-b	*Malleus* (*Malvufundus*) *regulus* (Forskål, 1775)	SBMNH 358548; LACM 58-7 (valves); MNHN; KLK 201273-201278 (voucher), 201289, 201276 (voucher)(+). Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection.
PINNIDAE		
Pl. 3, fig.6	*Pinna rugosa* Sowerby, 1835	As *Pinna* sp. in **Hertlein & Allison (1966)** (incomplete specimens in sediment patches in lagoon); **Salvat & Salvat, 1972** (fragments, in sediment deposits in lagoon); Finet, 1987a; Bernard et al., 1991; Emerson, 1994; as cf. *rugosa* in KLK 201247 (voucher, empty juvenile, transparent, fringing reef); 210398 (adult shell in sediment deposit in lagoon, specimen broken). Remarks: Collected in 1994 and 2005. Shells from the lagoon are very fragile due to the slightly acidic environment which dissolves the calcium carbonate.
Pl. 3, fig.5	*Streptopinna saccata* (Linnaeus, 1758)	KLK 210399 (voucher). Remarks: Occurs from South Africa to Tuamotus in Rosewater (1961). A single live specimen was found between two coral rocks in sand during the 2005 Expedition and preserved in KLK wet collection.
OSTREIDAE		
Pl. 4, figs.1, 2a-b	*Ostrea* sp. 1	SBMNH 353520 (voucher, live); KLK 201298 (voucher), 201310, 201314. Remarks: Collected in 1994 and 2005. One or more specimens found live. Dark irregular spotting on top valve.
Pl. 4, figs.3a-c	*Ostrea* sp. 2	KLK 201301, 201304 (voucher), 201315-201316. Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live. Compare with Ostreidae sp. 2 (KLK 201817) in Kaiser & Bryce (2001), Isla de Malpelo.
Pl. 4, figs.4a-c	*Ostrea* sp. 3	KLK 201290, 201294, 201308 (voucher), 210400. Remarks: Collected in 1994 and 2005. One or more specimens found live and preserved in KLK wet collection. This species is irregular and noticeably inequivalve with dark purple on the right valve margin.
GRYPHAEIDAE		
Pl. 4, figs.5a-b	*Hyotissa hyotis* (Linnaeus, 1758)	As *Ostrea* in **Hertlein & Allison (1966)** (live; empty shells in sediment deposits in lagoon), Keen (1971); as *Pycnodonta* in **Salvat & Ehrhardt (1970)** (valves); Emerson, 1978, 1994; Bernard et al., 1991; MNHN; KLK 201405 (voucher), 201406. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection. More commonly found attached to living coral at deeper depths (30-55 m).
Pl. 4, figs.6a-b	*Parahyotissa quercina* (Sowerby, 1871)	SBMNH 353519 (voucher); KLK 201291, 201293, 201295-201296 (voucher), 201297, 201299-201300, 201305-201306, 201314 (+). Remarks: Collected in 1994, 1998, 2005 and 2007. Several specimens found live and preserved in KLK wet collection. Compare with Ostreidae sp. 5 (KLK 201832) in Kaiser & Bryce (2001), Isla de Malpelo.
PECTINIDAE		
Pl. 5, figs.1a-b	*Delectopecten vitreus* (Gmelin, 1791)	AHF 427 (collected, 1934); as *Delectopecten zacae* (Hertlein, 1935) in **Hertlein & Emerson (1953)** (live, dredged 110-150 fm, photo,

	Delectopecten vitreus (Gmelin, 1791) (continued)	hypotypes 33347-33348, UCMP), Sachet (1962c), Salvat & Ehrhardt (1970); as *Cyclopecten zacae* in Emerson (1994); Grau (1959) states Clipperton specimens are *D. vitreus* and not *D. zacae*; Keen, 1971. *Delectopecten gelatinosus* (Mabille & Rochebrune, 1889) is synonymous with *D. vitreus* in Grau (1959) and considered to be the deep-water species living at Clipperton, *fide* Tomas Waller, USNM (pers. comm., 1998); KLK 201317-201321(voucher), 201324 (with host). Remarks: Trawled from 113 m in 1998, attached by byssus to brown hydroid sp. Many specimens collected live and several preserved with host in KLK wet collection.
SPONDYLIDAE		
Pl. 5, figs.2a-b	*Spondylus linguaefelis* Sowerby, 1847	As *S. gloriosus* Dall, Bartsch & Rehder, 1938, in **Hertlein & Allison (1966)** (live) (empty shells in sediment deposits in lagoon), **Salvat & Ehrhardt (1970)** (4 valves, 2 fresh), Keen (1971), Emerson (1978); synonymized in Kay (1979); Bernard, 1983; Bernard et al., 1991; Emerson, 1994; as *Spondylus* sp. in **Small (1994**, 1995); **Skoglund (2000)**; Kaiser & Bryce, 2001; as cf. *linguaefelis* in **Schneider (2004)** (worn beach deposit); SBMNH 358706-358707 (live, wet collection), 358544; MNHN; KLK 201325 (juv.), 201414-201415 (voucher), 201423 (+). Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection. Numerous fragile lagoon deposits.
ANOMIIDAE		
---	*Anomia (Anomia) peruviana* d'Orbigny, 1846	**Hertlein & Emerson, 1953** (?valves, dredged, 100-200 fm); Sachet, 1962c; Salvat & Ehrhardt, 1970 [also listed as erroneous, p. 223]; Bernard, 1983; Bernard et al., 1991; Emerson, 1994, 1995. Remarks: Not collected since 1952 although no deep-water dredging for mollusks at those depths has been done since then.
	HETERODONTA	
LUCINIDAE		
Pl. 5, figs.3a-b	*Codakia distinguenda* (Tryon, 1872)	**Hertlein & Allison, 1966** (beach deposits, in sediment deposits in lagoon); **Salvat & Ehrhardt, 1970** (valves); Bernard, 1983; Bernard et al., 1991; Emerson, 1994, 1995; KLK 210019 (voucher), 210401-210405. Remarks: Two beach deposits collected in 2005 and common as sediment deposits in lagoon. This species has not been recorded alive at Clipperton.
Pl. 5, figs.4a-b	*Codakia punctata* (Linnaeus, 1758)	As *C. thaanumi* in **Hertlein & Allison (1966)** (empty shells in sediment deposits in lagoon), **Salvat & Ehrhardt (1970)** (empty shells in sediment deposits in lagoon), Emerson (1978); Bernard, 1983; Bernard et al., 1991; Emerson, 1994; KLK 210018 (voucher), 210406-210407. Remarks: Collected in 2005 and 2007 as fragile empty shells. This Indo-Pacific species has only been recovered from sediment deposits in the lagoon, obviously thriving there before the closure of the lagoon and, in turn, the brackish water. No specimens have been collected from the ocean side of the atoll.
Pl. 5, figs.5a-c	*Ctena clarionensis* Hertlein & Strong, 1946	SBMNH 210427; MNHN; KLK 201332 (voucher), 210039 (+). Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection. This species is quite common at Clipperton.

Pl. 5, figs.6a-b	*Ctena clippertonensis* Bartsch & Rehder, 1939	**Bartsch & Rehder, 1939** (USNM holotype 472552, photo, type locality); **Hertlein & Emerson,** 1953, **1957** (two fragments, beach deposits); Keen, 1958, 1971; Sachet, 1962c; **Hertlein & Allison, 1966** (live, 15.6 mm); **Salvat & Ehrhardt, 1970**; Bernard, 1983; Bernard et al., 1991; Emerson, 1994; SBMNH 210428, 358628 (wet collection), 358551; LACM 58-7 (single valves); MNHN; SIO-BI M1495 (live, reef flat, 17.5 mm); KLK 201326-201327(voucher), 201344 (+). Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live and preserved in KLK wet collection. Size record: 21.4 mm. Draper (1972) reported *Ctena clippertonensis* from *Spondylus princeps* shakings southeast of Santa Rosalia, Baja California. The Draper (1972) record is herein considered unlikely and suspect. The LACM voucher specimen(s) cannot be located. According to E.V. Coan (pers. comm., 2006) *Ctena clippertonensis* is endemic to Clipperton and the Keen (1971) Panamá record is suspect.
CONDYLOCARDIIDAE		
Pl. 6, figs.1a-c	*Condylocardia digueti* Lamy, 1916	KLK 210408 (voucher). Remarks: A single valve collected in 2005.
MONTACUTIDAE		
---	?*Planktomya* sp. 1	KLK 210465. Remarks: Single juvenile valves collected in 2005. The genus is known for teleplanic larval dispersal.
CHAMIDAE		
Pl. 6, figs.2a-b, 3,4	*Chama rubropicta* Bartsch & Rehder, 1939	As *Chama rubropicta* Bartsch & Rehder, n.sp., in **Bartsch & Rehder (1939)** (holotype 472553, USNM, photo); as *C. squamuligera rubropicta* in **Hertlein & Emerson (1953)**, Sachet (1962c), **Hertlein & Allison (1966)** (live), **Salvat & Ehrhardt (1970)**; as *squamuligera* in Bernard (1976); *C. rubropicta* synonymized in Bernard (1976, 1983), reporting both *buddiana* and *squamuligera* from Clipperton, Emerson (1994); SBMNH 210435; KLK 201352 (voucher), 201353-201378, 210035 (voucher, wet)-210036, 210448-210456, 210462-210464. Remarks: *Chama rubropicta* is herein reinstated. Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection. Specimens are shiny white and may be stained with light orange to deep red on the interior and exterior of one or both valves. Top valves of juveniles are very common in < 5 mm grunge and largest lagoon specimens do not exceed 35 mm. The species is found attached to hard corals.
Pl. 6, figs.5a-d, 6	*Chama* sp. 1	KLK 201379 (3 vouchers), 201380-201383. Remarks: Collected in 1998. One or more specimens found live (dry). Trawled in 113 m, mostly attached to shells of same species. For comparison see image of *Chama* cf. *arcana* in Schneider (2006) from Hurricane Banks, TEP (138 m).
SEMELIDAE		
Pl. 7, figs.1a-c	*Semele jamesi* Coan, 1988	KLK 201389, 210045, 210409-210411 (voucher). Remarks: Collected as empty shells in 1998 and 2005.
Pl. 7, figs.2a-f	*Rochefortina sandwichensis* (Smith, 1885)	KLK 210006 (voucher). Remarks: A single specimen and several valves collected in 2005. Specimens are quite cancellate in sculpture and may have pink-colored rays extending from the umbonal area.
GASTROCHAENIDAE		
Pl. 8, figs.1a-c, 2	*Gastrochaena* (*Rocellaria*) *ovata* Sowerby, 1834	**Hertlein & Allison, 1966** (live, dredged, 92 m), Salvat & Ehrhardt, 1970, Bernard, 1983, Bernard et al., 1991, Emerson, 1994, 1995; MNHN; KLK 201384, 201385 (voucher)-201387, 210025 (voucher),

	Gastrochaena (*Rocellaria*) *ovata* Sowerby, 1834 (continued)	210412-210414. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection. Regarding raising of subgenus see J. Hertz & Kaiser (1998b). More common in live corals at deeper depths of 30-50 m.
PHOLADIDAE		
---	*Martesia* (*Martesia*) *striata* (Linnaeus, 1758)	**Hertlein & Allison, 1966** (empty shells from coral debris); Salvat & Ehrhardt, 1970; Emerson, 1978, 1994; Bernard, 1983; Bernard et al., 1991. Remarks: No records of this species or specimens have been found since 1958.
TEREDINIDAE		
Pl. 8, figs.3a-b	Teredinidae sp. 1	KLK 210016 (voucher). Remarks: This single living specimen came from a water-logged tree trunk that washed up on shore at Clipperton after heavy swells in 2005 and has been preserved in KLK wet collection.
GASTROPODA		
VETIGASTROPODA		
SCISSURELLIDAE		
---	*Sinezona rimuloides* (Carpenter, 1865)	SBMNH 358511; KLK 200515 (voucher)-200519. Remarks: Collected in 1994, 1998 and 2005 at nearly all collecting stations, 11-62 m.
Pl. 9, figs.1a-d	*Sinezona* sp. 1 Geiger, MS	KLK 200516, 210108, 210047 (voucher). Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live.
Pl. 9, figs.2a-d	*Scissurella kaiserae* Geiger, 2006	KLK 210001, 210110-210111. Remarks: Collected in 1994 and 2005. One or more specimens were found live. Recorded for the first time at Clipperton.
---	cf. Scissurellidae sp. 1	Berkeley B-6120 (empty shells). Remarks: Two specimens lacking a selenizone. Compare with Scissurellidae spp. 1 & 2 in Kaiser & Bryce (2001), Isla de Malpelo.
FISSURELLIDAE		
Pl. 10, figs.1a-b	*Emarginula* sp. 1	MNHN; KLK 200520-200521, 210079 (voucher), 210083. Remarks: Collected in 1994, 1998 and 2005.
Pl. 10, figs.2a-b	*Emarginula* sp. 2	KLK 210080 (voucher), 210081-210082. Remarks: Collected in 2005. The apex of this specimen is closer to the outer margin of the shell when compared to *Emarginula* sp. 1. It may be the same species.
Pl. 10, figs.3a-b	*Diodora granifera* (Pease, 1861)	**Hertlein & Allison, 1966** (live, common); Salvat & Ehrhardt, 1970; Keen, 1971; Emerson, 1978, 1991, 1994; Kay, 1979; SBMNH 358704 (live, wet collection); LACM 58-7 (empty shells); MNHN; KLK 200522-200524 (voucher), 200525-200526, 210002-210005, 210084-210085, 210115-210119. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection. Found living mostly in the low intertidal and shallow water attached to undersurfaces of coral rock. Clipperton specimens are small for the species.
Pl. 10, figs.4a-b, 5	*Diodora* cf. *punctifissa* McLean, 1970	KLK 200527, 200530, 200532 (voucher), 210034 (voucher). Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live.
SKENEIDAE		

Pl. 11, figs.1, 2a-b	*Pachystremiscus solitarius* (Hertlein & Allison, 1968)	Identified as *Cyclostrema cingulifera* A. Adams, 1850, in **Hertlein & Allison (1966)** (live); as *Cyclostremiscus solitarius* n. sp. in **Hertlein & Allison (1968)** (UCMP, holotype 37121, live, type locality), Salvat & Ehrhardt (1970), Keen (1971), González (1993); moved from *Cyclostremiscus* by Emerson (1994); **Kaiser & Bryce, 2001**; LACM 58-7 (empty shells); KLK 200534-200539, 210046 (voucher), 210086-210087. Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live. The most common of the *Pachystremiscus* spp. at Clipperton. First published SEM herein.
Pl. 11, figs.3a-b	*Pachystremiscus* sp. 1	KLK 200540 (voucher). Remarks: Collected as empty shells in 1994.
Pl. 11, figs.4a-b	*Pachystremiscus* sp. 2	KLK 200541 (voucher). Remarks: Collected as empty shell in 1994.
TURBINIDAE		
---	*Homalopoma* (*Panocochlea*) *clippertonense* (Hertlein & Emerson, 1953)	As *Clanculus clippertonensis* in **Hertlein & Emerson (1953)** (UCMP, holotype 33341, ?empty shell, dredged in 100-200 fm, photo, type locality), Sachet (1962c), Salvat & Ehrhardt (1970); Keen, 1971; Emerson, 1994, 1995. Remarks: The author has not collected this species.
Pl. 11, figs.5a-b	cf. *Eulithidium diantha* (McLean, 1970)	KLK 200542 (voucher). Remarks: Collected as empty shell plus a fragment in 1998. Voucher specimen crushed on SEM stub.
		NERITIMORPHA
NERITIDAE		
Pl. 12, figs.1a-b	*Nerita* (*Ritena*) *plicata* Linnaeus, 1758	**Bartsch & Rehder, 1939**; Hertlein & Emerson, 1953; **Hertlein & Allison, 1960b** (live); **Sachet, 1962c** (high intertidal); **Salvat & Ehrhardt, 1970**; Emerson, 1978, 1991, 1994; MNHN; KLK 200543 (voucher), 210088. Remarks: Collected in 1998 and 2005. One or more specimens found live and preserved in KLK wet collection. An Indo-Pacific species that occurs only at Clipperton in the TEP and is fairly well established.
PHENACOLEPADIDAE		
Pl. 12 figs.2a-c	*Plesiothyreus* cf. *osculans* (C.B. Adams, 1852)	SBMNH 210444 (broken shells); KLK 200544, 210089-210092 (voucher). Remarks: Collected as empty shells in 1998 and 2005.
		CAENOGASTROPODA
LITTORINIDAE		
Pl. 12 figs.3a-b	*Littoraria* (*Protolittoraria*) *coccinea* (Gmelin, 1791)	**Reid & Kaiser, 2001,** citing a specimen in KLK 200546 (voucher, photo) = SBMNH 345467, 210095-210096. Remarks: Collected in 1998, 2005 and 2007. Many specimens found live in 2005 and preserved in KLK wet collection. An Indo-Pacific species that occurs only at Clipperton and Isla del Coco in the TEP and is well established at Clipperton.
Pl. 12 figs.4a-b	*Littoraria* (*Protolittoraria*) *pintado pullata* (Carpenter, 1864)	As *Littorina schmitti* Bartsch & Rehder, n.sp. in **Bartsch & Rehder (1939)** (USNM, holotype 472547, photo), Hertlein & Emerson (1953), **Hertlein & Allison (1960b)** (live), **Sachet (1962c)** (intertidal), **Salvat & Ehrhardt (1970)**, Keen (1971), González (1993); as *Littorina pintado schmitti* Bartsch & Rehder in Rosewater (1970) (known only from Clipperton), Emerson (1978); as *Littoraria* (*P.*) *pintado* Reid, 1989, in Reid (1989); Emerson, 1991, 1994, 1995; Reid, 1999; **Reid & Kaiser, 2001**; **Schneider, 2004** (beach deposit); SBMNH 358703 (live, wet collection); USNM, holotype 472547,

	Littoraria (*Protolittoraria*) *pintado pullata* (Carpenter, 1864) (continued)	live, photo: SIO-BI M1493, M1498; KLK 200547-200548 (voucher), 210093-210094. Remarks: Collected in 1994, 1998 and 2005. One or more specimens found living and preserved in KLK wet collection. By far the most abundant of the Clipperton littorinid spp.
Pl. 12, fig.5	*Littoraria undulata* (Gray, 1839)	KLK 210097 (voucher). Remarks: The single live specimen collected in 2005 is preserved in KLK wet collection. This Indo-Pacific species is known from only two live collected specimens from the TEP islands; one specimen collected at Isla del Coco (Reid & Kaiser, 2001) and the other at Clipperton.
Pl. 12, figs.6a-b	*Nodilittorina modesta* (Philippi, 1846)	**Reid, 2002** (citing KLK 200545, voucher), 210022. Remarks: Collected in 1998 and 2005. One or more specimens found live and preserved in KLK wet collection.
RISSOIDAE		
Pl. 13, figs.1a-b	*Alvania* sp. 1	KLK 200549 (voucher), 200550. Remarks: Collected in 1998 and one or more specimens found live. The uncommon Clipperton specimens are a translucent, light brown in color.
Pl. 13, figs.2a-b	*Onoba* sp. 1	MNHN; LACM 58-7 (empty shells); Berkeley B-6101a, B-6120 (empty shells); SBMNH 210433-210434 (empty shells); KLK 200551 (voucher), 200552, 210098-210099. Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live.
Pl. 13, figs.3a-b	*Rissoina* (*Rissoina*) *stricta* Menke, 1850	SBMNH 210120 (voucher). Remarks: Collected in 1994. The single specimen was found live. Operculum showing in aperture.
Pl. 13, figs.4a-b	*Rissoina* (*Rissoina*) sp. 1	SBMNH 210100 (voucher); KLK 200553. Remarks: Collected in 1998 and 2005. The specimens were found as empty shells.
Pl. 13, figs.5a-b	*Rissoina* sp. 2	SBMNH 210122 (voucher). Remarks: A single specimen found live in 1994.
Pl. 13, figs.6a,b	*Rissoina* sp. 3	KLK 201207, 210101 (voucher). Remarks: Collected in 2005. Specimens found as empty shells and are glassy white with brown blotches.
Pl. 13, figs.7a-b	*Parashiela* sp. 1	SBMNH 210121 (voucher). Remarks: A single empty shell was collected by H.W. Chaney in 1994.
BARLEEIDAE		
---	*Barleeia* cf. *bifasciata* (Carpenter, 1857)	KLK 200554 (voucher). Remarks: Collected in 1998. The empty juvenile shell has the characteristic amber color stripe on the body whorl. Specimen not imaged.
Pl. 14, figs.1a-b	*Barleeia* sp. 1	KLK 200555 (voucher). Remarks: Collected in 1994. One or more specimens found live.
---	*Barleeia* sp. 2	KLK 200556 (voucher) (empty shell, juvenile). Collected in 1994. No SEM was taken before the adult specimen was lost.
Pl. 14, figs.3a-b	*Lirobarleeia* cf. *nigrescens* (Bartsch & Rehder, 1939)	LACM 58-7 (voucher). Remarks: One or more empty shells were collected in 1958.
Pl. 14, fig.4	cf. *Lirobarleeia* sp. 1	KLK 210102 (voucher). Remarks: A single empty juvenile shell was found in 1998.
ASSIMINEIDAE		
Pl. 14, figs.2a-b	*Assiminea* sp. 1	KLK 200966 (voucher). Remarks: A single empty shell collected intertidally in 1998.

ELACHISINIDAE		
Pl.14, figs.5a-b	*Elachisina* sp. 1	As *Amphithalamus trosti* Strong & Hertlein in **Hertlein & Allison (1968)** (UCMP, ITC, hypotype 37122, line drawing, 1.18 mm); LACM 58-7; MNHN; Berkeley B-6120 (empty shells); KLK 200557 (voucher)-200560. Remarks: Collected in 1994, 1998 and 2005. One or more specimens were collected live. I believe that the line drawing of *Amphithalamus trosti* in Hertlein & Allison (1968) is actually *Elachisina* sp. 1 herein and is very common in the shakings. No other *Amphithalamus* spp. have been recorded or recently found at Clipperton.
Pl. 14, figs.6a-b	*Elachisina* sp. 2	KLK 200561 (voucher). Remarks: A single specimen collected in 1994, possibly live.
Pl. 14, figs.7a-b	cf. *Elachisina* sp. 3	KLK 200562 (voucher). Remarks: Collected in 1998 as empty shells.
Pl. 14, figs.8a-b	cf. *Elachisina* sp. 4	LACM 58-7 (voucher). Remarks: Found as empty shells in 1958.
Pl. 14, figs.9a-b	cf. *Elachisina* sp. 5	SBMNH (empty shells). Remarks: Specimens are marked with brown blotches on a transparent background. One lot of this species was collected by H.W. Chaney in 1994.
VITRINELLIDAE		
Pl. 15, figs.1a-c	*Solariorbis* sp. 1	KLK 210103 (voucher). Remarks: A single empty shell was collected in 2005.
Pl. 15, figs.2a-b	Vitrinellidae sp. 1	KLK 200563 (voucher). Remarks: Empty shells were collected in 1998. The voucher specimen has been lost.
CAECIDAE		
Pl. 15, figs.3a-c	*Fartulum* (*Fartulum*) cf. *glabriforme* (Carpenter, 1857)	MNHN; KLK 200565 (voucher), 200566, 210123-210124. Remarks: Collected in 1994, 1998 and 2005. One or more specimens were collected live.
Pl. 15, fig.4	*Fartulum* sp. 1	KLK 200567 (voucher). Remarks: Collected as a single empty shell in 1994. Compare with *Fartulum* sp. 2 in Kaiser & Bryce (2001), Isla de Malpelo.
MODULIDAE		
Pl. 15, figs.5a-b, 6a-b	*Modulus* sp. 1	SBMNH 210426 (high spire), 210432 (empty shells); MNHN; KLK 200568 (voucher), 200569-200576, 210125-210130. Remarks: Collected in 1994, 1998, 2005 (also in lagoon sediment) and 2007. One or more of the specimens were found live and preserved in KLK wet collection. Originally I believed this to be *Modulus cerodes* (A. Adams, 1851), but when compared with Cocos material, believed to be *M. cerodes*, they showed dissimilar protoconchs. The Clipperton specimens are more solid with lower protoconch, although they look more like the Malpelo *M. cerodes* when adult.
VERMETIDAE		
Pl. 16, figs.1, 2	*Petaloconchus* cf. *keenae* Hadfield & Kay, 1972	Believed to be *Petaloconchus* (*Macrophragma*) sp. in **Hertlein & Allison (1966)** (beach deposits), Emerson (1994); as ?*Petaloconchus* (*Macrophragma*) sp. in **Schneider (2004)** (beach deposit); SBMNH 358701(empty shells); KLK 200612 (voucher), 200613 (+). Remarks: Collected in 1994, 1998 and 2005 as empty shells.
Pl. 16, fig. 4	*Petaloconchus* sp. 1	KLK 200600 (voucher), 210028 (voucher?). Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live and preserved in KLK wet collection.

---	*Petaloconchus* sp. 2	KLK 210022. Remarks: Collected live in 2005 and preserved in KLK wet collection.
Pl. 16, fig.3	*Eualetes* cf. *tulipa* (Chenu, 1843, *ex* Rousseau MS)	KLK 201393 (voucher), 200577. Remarks: Collected as empty shells from tangle net (49 m) in 1998.
Pl. 16, figs.5a-b	*Dendropoma meroclista* Hadfield & Kay, 1972	KLK 200618 (voucher), 200619-200621. Remarks: Collected in 1994, 1998 and 2005. One or more specimens were found live embedded in white coralline algal crust with aperture showing.
---	*Dendropoma* cf. *platypus* (Mörch, 1861)	As *Spiroglyphus* cf. *S. platypus* in **Hertlein & Allison (1966)** (beach deposits); as *Dendropoma* cf. *S. platypus* in Emerson (1994). Remarks: *Dendropoma meroclista* Hadfield & Kay, 1972, had not been described at the time that Hertlein & Allison (1966) put the tentative name on specimens of *Dendropoma* cf. *platypus*. It may be that this record is in fact *D. meroclista*.
Pl. 16, fig.6	*Dendropoma* sp.1	KLK 200579 (voucher). Remarks: Collected live in 1994, premetamorphic protoconchs in aperture of adult shell. Compare with *Dendropoma* sp. 1 (KLK 200172) in Kaiser & Bryce (2001), Isla de Malpelo.
CERITHIIDAE		
Pl. 16, fig.7	*Cerithium* cf. *atromarginatum* Dautzenberg & Bouge, 1933	KLK 210135 (voucher). Remarks: An Indo-Pacific species collected in 2005 as a single worn beach deposit.
Pl. 16, figs.8a-b	*Cerithium echinatum* Lamarck, 1822	KLK 200622 (voucher). Remarks: Collected in 1998, this Indo-Pacific species occurs only at Clipperton in the TEP and is known from only one crabbed specimen.
Pl. 16, figs.9a-b	*Cerithium maculosum* Kiener, 1841	SBMNH 353522 (empty shells); KLK 200623-200624, 210037 (voucher). Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live and preserved in KLK wet collection.
Pl. 17, figs.1a-d	*Cerithium* sp. 1	SBMNH 358617 (live, wet collection), 358707; MNHN; KLK 200625-200627 (voucher), 200628-200635, 200858, 210131-210133. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection. Believed to be a new species and is only known in the TEP from Clipperton. Crabbed specimens abundant, largest specimen 13.6 mm.
Pl. 17, figs.2a-c	*Cerithium* sp. 2	KLK 200636 (voucher). Remarks: Collected in 1998 and 2005. One or more specimens found live. This is a small species (6.5 mm) and is only known from a few specimens.
Pl. 17, figs.3a-b	cf. Cerithiidae sp. 1	KLK 200637 (voucher). Remarks: Collected in 1998. A small species (2.76 mm) and is only known from one empty juvenile shell. Placement to family is uncertain.
PLANAXIDAE		
Pl. 17, figs.4a-c	*Angiola* sp. 1	KLK 200968 (voucher), 210136; LACM 58-7 (voucher, juvenile, empty shell). Remarks: Collected in 1998 and 2005 as empty shells.
Pl. 17, figs.5a-b	*Fossarus* cf. *angulatus* Carpenter, 1857	KLK 200638, 210137 (voucher). Remarks: Collected in 1998 and 2005. The single empty shell from 1998 (KLK 200638) was lost.
EPITONIIDAE		
Pl. 18, figs.2a-b	*Epitonium* (*Asperiscala*) *billeeanum* (DuShane & Bratcher, 1965)	SBMNH 358508 (live, juvenile); MNHN; KLK 200642 (with host) - 200644 (voucher), 200645-200647, 210139. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live. At Clipperton, found living on its coral host *Tubastraea coccinea* Lesson, 1863.

Pl. 18, figs.1a-b	*Epitonium* (*Asperiscala*) *emydonesus* Dall, 1917	KLK 210138 (voucher). Remarks: Collected in 2005 as empty shells. First thought to be *Epitonium acapulcanum* but the glossy white shell has a transparent, glassy brown protoconch which is not characteristic of *E. acapulcanum.*
Pl. 18, figs.3a-c	*Epitonium* sp. 1	KLK 200639 (voucher), 210140. Remarks: Collected in 1998 and 2005. One specimen found living on host coral ?*Dendrophyllia* sp. in 1998.
Pl. 18, figs.4a-b	*Epitonium* sp. 2	KLK 200640 (voucher). Remarks: A single live specimen collected in 1998.
Pl. 18, fig.5	*Epitonium* sp. 3	KLK 200641 (voucher). Remarks: A single early juvenile, empty shell collected in 1994. Compare with *Epitonium* sp. 1 (KLK 200192) in Kaiser & Bryce (2001), Isla de Malpelo.
JANTHINIDAE		
---	*Janthina globosa* Blainville, 1822	**Salvat & Ehrhardt, 1970**; Emerson, 1994, 1995.
---	*Janthina janthina* (Linnaeus, 1758)	**Hertlein & Allison, 1960b** (beach deposits); Sachet, 1962c; **Salvat & Erhardt, 1970**; Emerson, 1994; KLK 200648. Remarks: In 1998 only fragments were found large enough to identify to species.
EULIMIDAE		
Pl. 19, fig.1	*Melanella cumingii* (A. Adams, 1854)	As *Balcis* cf. *B. cumingi* [sic] *medipacifica* (Pilsbry, 1917) in **Hertlein & Allison (1966)** (single empty shell), Kay (1979) (citing Hertlein & Allison (1966) record); not mentioned in Salvat & Ehrhardt (1970), Emerson (1978, 1994); KLK 210023 (wet collection), 200698-200704. Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live and preserved in KLK wet collection.
Pl. 19, figs.2a-b	*Melanella dufresnei* Bowdich, 1822	KLK 200679, 200695 (vouchers), 200696 (+). Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live and preserved in KLK wet collection. Live animal has orange spots that show through the translucent shell.
Pl. 19, figs.3a-b	*Melanella* cf. *exilis* (Pease, 1863)	KLK 200682 (voucher) - 200688, 200711, 200122, 210417 (voucher, wet coll.). Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live and preserved in KLK wet collection. Living mostly on host *Euapta godeffroyi*, an Indo-Pacific species of holothurian.
---	*Melanella inflexa* (Pease, 1868)	As *Balcis vafra* (Pilsbry, 1917) in **Hertlein & Allison (1966)** (empty shell), Salvat & Ehrhardt (1970); Kay, 1979; Emerson, 1994; as cf. *inflexa*, KLK 200717 (voucher). Collected as worn empty shell in 1994.
Pl. 19, figs.4a-b	*Melanella thaanumi* (Pilsbry, 1917)	**Hertlein & Allison, 1966** (shells with crab, common); Kay, 1979; Emerson, 1994; KLK 200694 (voucher), 200705-200710. Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live and preserved with host *Stichopus* sp. in KLK wet collection. Found living on two different holothurians: *Stichopus* sp. and *Holothuria* sp.
Pl. 19, fig.5	*Melanella* sp. 1	KLK 200649-200652 (voucher), 200653-200655. Remarks: Collected in 1998. One or more specimens found live and preserved in KLK wet collection. The species has an unusually pointed apex and irregular varices.
Pl. 19, fig.6	*Melanella* sp. 2	KLK 200656-200661 (voucher), 200662-200663, 200715, 200718, 200724. Remarks: Collected in 1994 and 1998. One or more specimens found live and preserved in KLK wet collection. The

	Melanella sp. 2 (continued)	animal is pinkish in color and the varices extend straight up from the aperture.
Pl. 19, fig.7	*Melanella* sp. 3	KLK 200716 (voucher), 210142 (+). Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live and preserved in KLK wet collection. The animal is the same color as the shell, the aperture is angular and the apex is very pointed.
Pl. 20, figs.8a-b	*Melanella* sp. 4	KLK 200697 (voucher), 200725, 210144-210146. Remarks: Collected live in 1998 and preserved in KLK wet collection. This is a long narrow species and the varices are scattered.
Pl. 20, fig.9	*Melanella* sp. 5	KLK 200712 (voucher). Remarks: Collected live in 1998. Unusual apex, operculum horny, transparent.
Pl. 20, fig.10	*Melanella* sp. 6	KLK 200726 (voucher). Remarks: A single specimen collected live in 1994. The shell is torqued and animal shows through.
Pl. 20, fig.11	*Melanella* sp. 7	KLK 200691, 200696 (voucher), 200700. Remarks: Collected in 1994 and 1998. One or more specimens found live. The shell is large and narrow with varices that are regularly stair-stepped.
Pl. 20, figs.12a-b	cf. *Sabinella* sp. 1	KLK 200714 (voucher), 200720. Remarks: Collected in 1994, 1998, 2005 and 2007. One specimen found live in 2007 on *Eucidaris* cf. *thouarsii* and preserved in KLK wet collection.
Pl. 20, fig.13	cf. *Sabinella* sp. 2	KLK 200713 (voucher). Remarks: A single empty shell collected in 1994. Voucher specimen crushed on SEM stub.
Pl. 20, fig.14	*Scalenostoma* sp. 1	KLK 210416 (voucher). Remarks: A single decollate, empty shell collected in 2005.
Pl. 20, figs.15a-b	Eulimidae sp. 1	KLK 200664-200666 (voucher), 200671. Remarks: Collected in 1994 and 1998. One or more specimens found live. Shell is narrow and transparent.
Pl. 20, fig.16	Eulimidae sp. 2	KLK 210141 (voucher). Remarks: Specimens collected live in 2005.
HIPPONICIDAE		
Pl. 21, figs.1a-b	*Hipponix antiquatus panamensis* C.B. Adams, 1852	As *H. fimbriata*, n. sp. in **Bartsch & Rehder (1939)** (USNM, holotype 472853, photo); as *H. fimbriatus* in **Hertlein & Emerson** (1953, **1957**) (empty shells); as *H. fimbriata* in **Hertlein & Allison (1960b)** (live), Sachet (1962c), Salvat & Ehrhardt (1970); as *H. foliaceus* in Emerson (1994); Emerson, 1995; SBMNH 358509, 358515 (live); LACM 58-7 (empty shells); MNHN; SIO-BI M7175 (empty shells); KLK 200369, 200729-200736 (voucher), 210147-210154. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection.
Pl. 21, figs.2a-d	*Antisabia foliacea* (Quoy & Gaimard, 1835)	As *Hipponix antiquatus* (Linnaeus, 1767) in **Hertlein & Allison (1960b)** (beach deposits), Sachet (1962c), **Salvat & Ehrhardt (1970)**, Emerson (1978); as *Hipponix* in Emerson (1994); KLK 200737-200738 (voucher), 200739-200741, 200210. Remarks: Collected in 1994, 1998 and 2005. One or more specimens were found live and preserved in KLK wet collection. Also found as lagoon deposits. Raised from subgenus by Knudsen (1993).
Pl. 21, figs.4a-b, 5	*Pilosabia pilosa* (Deshayes, 1832)	As *Hipponix barbata* Sowerby in **Bartsch & Rehder (1939)**; as *H. pilosus* Deshayes in Hertlein & Emerson (1953), **Hertlein & Allison (1960b)** (live), Sachet (1962c), **Salvat & Ehrhardt (1970)**, Emerson (1994); Emerson, 1995; SBMNH 358550 (empty shells); LACM 58-7

	Pilosabia pilosa (Deshayes, 1832) (continued)	(empty shells); MNHN; SIO-BI M1494 (empty shells); KLK 200742-200744, 210007 (voucher), 210008-210013. Remarks: Collected in 1994, 1998 and 2005. One or more specimens were found live and preserved in KLK wet collection.
Pl. 21, figs.3a-d	Hipponicidae sp. 1	SBMNH 558510; LACM 58-7 (empty shells); MNHN; KLK 200745-200746 (vouchers), 200747-200748, 210157-210162. Remarks: Collected as empty shells in 1994, 1998 and 2005.
CALYPTRAEIDAE		
Pl. 21, fig.6	*Crepidula* sp. 1	KLK 200749 (voucher). Remarks: A single live juvenile specimen was collected from shakings in 1998.
ATLANTIDAE		
Pl. 22, fig.1	*Atlanta fusca* Souleyet, 1852	KLK 200754 (voucher), 210163. Remarks: Collected as empty shells, larval stage in 1998 and 2005.
Pl. 22, figs.2a-b	*Atlanta* cf. *gaudichaudi* Souleyet, 1852	KLK 200753 (voucher). Remarks: Collected as empty shells in 1994. Det. R. Seapy.
---	*Atlanta inclinata* Souleyet, 1852	KLK 210164. Remarks: Collected as empty shells in 2005.
Pl. 22, fig.3	*Atlanta* cf. *inflata* Souleyet, 1852	KLK 200750 (voucher). Remarks: Collected as empty juvenile shell in 1998.
---	*Atlanta* cf. *peroni* Lesueur, 1817	KLK 210165. Remarks: Collected as empty shells in 2005.
---	*Atlanta turriculata* d'Orbigny, 1836	KLK 210166-210167. Remarks: Collected as empty shells in 1998 and 2005.
Pl. 22, fig.4	*Oxygyrus keraudrenii* (Lesueur, 1817)	KLK 200751 (voucher), 200752, 210168-210169. Remarks: Collected as empty shells (bellerophina stage) in 1994, 1998 and 2005.
CARINARIIDAE		
Pl. 22, figs.5a-c	*Pterosoma* cf. *planum* (Lesson, 1827)	KLK 200468 (voucher). Remarks: Collected as empty larval shells in 1994.
Pl. 22, figs.6a-b	Carinariidae sp. I	KLK 200466 (voucher). Remarks: Collected as empty larval shells in 1994.
PTEROTRACHEIDAE		
Pl. 22, figs.7a-c	*Firoloida desmaresti* Lesueur, 1817	KLK 200471 (voucher), 210170. Remarks: Collected as empty shells in 1994 and 2005.
NATICIDAE		
Pl. 23, figs.1a-b	*Polinices (Mammilla) simiae* (Deshayes *in* Deshayes & Edwards, 1838)	**Chaney, 1996** (figured from specimen in KLK Collection). KLK 200758 (voucher), 210171. Remarks: Collected as empty shells in 1998 and 2005.
Pl. 23, fig.2	Naticidae sp. 1	KLK 200756 (voucher). Remarks: Collected in 1994. One or more juvenile specimens were found live.
Pl. 23, fig.3	?Naticidae sp. 2	KLK 200757 (voucher). Remarks: Collected as empty shell in 1994. Placement to family is uncertain.
Pl. 23, fig.4	?Naticidae sp. 3	MNHN; KLK 200755 (voucher), 210172-210173. Remarks: Collected as empty shells in 1994, 1998 and 2005. Compare with cf. Naticidae sp. 3 (KLK 200293) in Kaiser & Bryce (2001), Isla de Malpelo; same sp. occurs at Isla del Coco, Costa Rica. Placement to family is uncertain, possibly a *Vetulina* sp.
TRIVIIDAE		

Pl. 23, figs.5a-c	*Trivia cherobia* (Cate, 1979)	KLK 200759 (voucher). Remarks: Recovered live in 1998 from tangle net, 61m, det. L.T. Groves. Distribution Record: The species was described from one specimen (6.3 mm), Bahía Magdalena, Baja California, México, holotype LACM 1803.
CYPRAEIDAE		
Pl. 24, figs.1a-b, 2a-b	*Monetaria caputserpentis caputserpentis* (Linnaeus, 1758)	As *Cypraea caputserpentis* in Keen (1958: 327, 1971), **Hertlein & Allison (1960a)** (fresh beach deposits), Sachet (1962c), Salvat & Ehrhardt (1970), Emerson (1978, 1991, 1994), Cantera (1991), **Small (1994** [empty shells], 1995), Beals (1995); as *Erosaria caputserpentis caputophidii* Schilder, 1927, in Cate (1969) (live, abundant, photo); as *Erosaria caputserpentis* in Emerson & Chaney (1995); KLK 200793 (voucher), 210174. Remarks: Collected in 1998 and 2005 as decorticated worn beach deposits. Genus changed to *Monetaria* in Meyer (2003). Because only beach specimens have been collected recently, an image of *M. caputserpentis caputserpentis* from Isla del Coco is also shown on Plate 24.
Pl. 24, figs.3a-b, 4a-b	*Monetaria moneta* (Linnaeus, 1758)	As *Cypraea* in Keen (1958: 327, 1971), **Hertlein & Allison (1960a)** (UCMP,TC hypotypes 37726-37727, live, line drawings), Sachet (1962c); as *Monetaria moneta barthelemyi* (Bernardi) in Cate (1969) (AMNH 204596a, empty shells, abundant, photo); as *Cypraea* in Salvat & Ehrhardt (1970) (5 specimens), Emerson (1978, 1991, 1993, 1994), Kay (1979), Finet (1987b), Cantera (1991), **Small (1994** [empty shells], 1995), **Beals (1995)** (empty shells, worn); reported as common in Hickman & Finet (1999); Emerson & Chaney, 1995; Kaiser, 1999; **Schneider, 2004** (beach deposit); SBMNH 358486 (beach deposits); AMNH 204596, 86235; KLK 200812-200813 (voucher), 210175-210177. Remarks: Collected in 1994, 1998, 2005 (in lagoon also) and 2007. Very common as beach deposits. Cate (1969) reported *M. moneta* as being common and living in intertidal water. In my four expeditions to Clipperton, none have been found living. Because only beach worn specimens have been collected recently, an image of a fresh *M. moneta* from Isla del Coco is also shown on Plate 24.
Pl. 24, figs.7a-b	*Erosaria albuginosa* (Gray, 1825)	As *Cypraea* in **Hertlein & Allison (1960a)** (live), Sachet (1962c), Emerson & Old (1963), **Salvat & Ehrhardt (1970)**, Burgess (1970, 1985), Emerson (1994, 1995), **Small (1994)** (live), **Beals (1995)** (live, photo), Cate (1969); **Emerson & Chaney, 1995**; Kaiser, 1999; **Schneider, 2004** (beach deposit); CASIZ 103450, 103490; MNHN; SBMNH 358624, 358487 (live, wet collection), 358488; KLK 200781-200791 (voucher), 200792, 210178-210180. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection.
Pl. 24, figs.5a-b, 6a-b	*Erosaria helvola helvola* (Linnaeus, 1758)	As *Cypraea helvola* in **Hertlein & Allison (1960a)** (AMNH 204597, beach deposits), Sachet (1962c), as *C. helvola hawaiiensis* Melvill in Cate (1969) (AMNH 204597a, ?live, photo), Emerson (1978); as *Cypraea* in Salvat & Ehrhardt (1970), Keen (1971), Kay (1979), Cantera (1991), Emerson (1991, 1994), **Small (1994)** (dead), **Beals (1995)** (dead, worn); Groves, 1992; Emerson & Chaney, 1995; Kaiser, 1999; SBMNH 353521 (voucher, worn beach deposit). Remarks: Because only worn specimens have been collected recently, an image of a fresh *E. helvola helvola* is shown from the Marshall Islands. I believe that Cate (1969) photographed specimens in fine condition that were not collected at Clipperton.

Pl. 25, figs.1a-b	*Mauritia depressa* (Gray, 1824)	As *Cypraea gillei* Jousseaume, 1893, in **Hertlein (1937)** (CAS, PTC plesiotype 7066, photo); as *Cypraea depressa* in Hertlein & Emerson (1953), Keen (1958: 327, 1971), **Hertlein & Allison (1960a)** (worn beach deposits), Sachet (1962c); as *Mauritia d. depressa* in Cate (1969) (single live specimen, photo); as *Cypraea depressa* in Salvat & Ehrhardt (1970), Burgess (1970, 1985), Emerson (1978, 1991, 1994), Cantera (1991), Beals (1995); Emerson & Chaney, 1995; KLK 210026 (voucher). Remarks: Collected as worn beach deposits in 2005. I believe that Cate (1969) photographed specimens in fine condition that were not collected at Clipperton.
---	*Mauritia maculifera* Schilder, 1932	As *Cypraea* in **Hertlein & Allison (1960a)** (single beach-worn specimen), Sachet (1962c), Salvat & Ehrhardt (1970), Keen (1971), Emerson (1978, 1991, 1994), Kay (1979), Cantera (1991), Beals (1995); Cate, 1969 (empty shells, AMNH 204575a); Groves, 1992 (two empty shells, worn, AMNH 204575); Emerson & Chaney, 1995. Remarks: I believe that Cate (1969) photographed specimens in fine condition that were not collected at Clipperton.
Pl. 25, figs.3a-b	*Mauritia scurra* (Gmelin, 1791)	As *Cypraea scurra* in **Hertlein (1937), Hertlein & Emerson (1953** [CAS, PTC hypotype 9880, photo], **1957)** (single beach deposit), Keen (1958: 327), **Hertlein & Allison (1960a)** (fresh beach deposits), Sachet (1962c), **Salvat & Ehrhardt (1970)**, Burgess (1970, 1985) (empty shells), Kay (1979), Emerson (1991, 1994), **Small (1994)** (empty shells), **Beals (1995)** (empty shells); as *M. scurra retifer* (Menke, 1829) in Cate (1969) (?empty shells, photo); as *Cypraea scurra indica* Gmelin in Keen (1971), Emerson (1978), Cantera (1991); Emerson & Chaney, 1995; **Kaiser, 1999** (live, photo); **Schneider, 2004** (beach deposit); CASIZ 48948, 37062 (beach deposits); SBMNH 358485 (empty shells); SDNHM 42904 (empty shells); KLK 200808 (voucher, size record, 60.9 mm)-200811, 210181-210182. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved with egg mass in KLK wet collection. The first year in which a specimen was found live (with egg mass) was 1998. Beach deposits were abundant in 2005 and 2007 but no live specimens were seen.
---	*Talparia talpa* (Linnaeus, 1758)	Hector Reyes-Bonilla (pers. comm., 2000); Meyer, 2003. Remarks: "*T. talpa* ranges from Clipperton Island in the East Pacific all the way through the Indo-West Pacific to the Red Sea and East Africa" in Meyer (2003). I have not seen any Clipperton *Talparia talpa* specimens.
Pl. 25, figs.4a-b	*Luria isabellamexicana* (Stearns, 1893)	As *Cypraea isabella-mexicana* in **Hertlein (1937), Hertlein & Emerson (1953,** [CAS, PTC hypotype 9878, photo], **1957)** (beach deposits), Keen (1958), **Hertlein & Allison (1960a)** (live), Sachet (1962c), Emerson & Old (1963); as *Luria* in Cate (1969) (live, photo); as *Cypraea* in Burgess (1970, 1985), **Perrin (1977)** (empty shells), Emerson (1994, 1995), **Small (1994,** live) (1995), **Beals (1995)** (live, photo), Kaiser, 1999; Emerson & Chaney, 1995; Meyer, 2003; **Schneider, 2004** (beach deposit); CASIZ 103446, 103486, 103487, 103491, 103494; MNHN; SIO-BI M1489, M3080 (empty shells); SDNHM 30672 (empty shells); SBMNH 358623, 358625-358626 (live, spent egg mass, wet collection), 358490; KLK 200794-200798 (voucher), 200799-200807, 210183-210185. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection.

---	*Lyncina schilderorum* (Iredale, 1939)	As *Cypraea arenosa* Linnaeus in **Hertlein & Allison (1960a)** (AMNH 204579, single beach deposit specimen, worn), Sachet (1962c), Salvat & Ehrhardt (1970); Cate, 1969 (AMNH 204579a, single beach deposit specimen, worn [specimen figured is believed not to be from Clipperton]), Emerson (1978); as *Cypraea schilderorum* in Keen (1971), Kay (1979), Cantera (1991), Emerson (1991, 1994), Beals (1995); Groves, 1992; Emerson & Chaney (1995).
---	*Lyncina vitellns* (Linnaeus, 1758)	As *Cypraea* cf. *vitellus* in **Hertlein & Allison (1960a)** (AMNH 204578, single worn beach deposit), Sachet (1962c); as *L. vitellus polynesiae* Schilder & Schilder in Cate (1969) (single beach deposit specimen, photo); as *Cypraea* in Keen (1971), Emerson (1978, 1991, 1994), Kay (1979), Cantera (1991), Beals (1995); Groves, 1992; Emerson & Chaney, 1995; KLK 210042. Remarks: Collected in 2005 as beach deposit (fragment).
Pl. 25, figs.5a-b, 6a-b	*Talostolida pellucens* (Melvill, 1888)	As *Cypraea teres* in Emerson & Old (1968); as *Cypraea teres pellucens* Melvill in Emerson & Old (1968, addendum), Keen (1971); as *Cypraea teres* [=?*alisonae*] in Emerson (1991, 1994); as *Blasicrnra alisonae* in Groves (1992); as *Cypraea alisonae* in **Small (1994, 1995)** (live, on egg mass), **Beals (1995)** (live, photo), Kaiser (1999); as *Blasicrnra alisonae* in **Emerson & Chaney (1995)**; as *Blasicrura teres* in **Schneider (2004)** (beach deposit); CASIZ 103447-103449, 103459-103461, 103470, 103488-103489; MNHN; SBMNH 358618-358622 (live, with egg mass, wet collection), 358489; SDNHM 30682-30683, 42901, 42903, 59040 (empty shells); KLK 200760-200769 (voucher), 200770-200775, 200777, 200779 (voucher), 200780, 210049 (voucher), 210186-210188. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection with egg mass. Genus changed to *Talostolida* in Meyer (2003). *Talistolida alisonae* and *T. teres pellucens* synonymized by Groves & Weil (2003).
TONNIDAE		
---	*Malea ringens* (Swainson, 1822)	**Hertlein & Emerson, 1957** (beach deposits); **Hertlein & Allison, 1960b** (beach deposit); Sachet, 1962c; Salvat & Ehrhardt, 1970; Emerson, 1994. Remarks: No living specimens have been found by the author or recorded to date.
CASSIDAE		
Pl. 26, figs.2a-b	*Cypraecassis* (*Cypraecassis*) *tenuis* (Wood, 1828)	As *Cassis* in **Hertlein & Allison (1960b)** (beach deposits), Sachet (1962c), Abbott (1968), **Salvat & Ehrhardt (1970)**; as *Cassis* sp. in **Perrin (1977)** (fragment); Emerson, 1983, 1994; **Small, 1994** (empty shell, in KLK Collection); Chaney, 1996; KLK 201398 (voucher), 210191. Remarks: Collected in 1994 and 2005 as empty shells.
Pl. 26, fig.1	*Cypraecassis* (*Levenia*) *coarctata* (Sowerby, 1825)	SBMNH 353701 (voucher), (worn beach deposit); KLK 210192. Remarks: Collected in 1994 and 2005 as worn beach deposits.
RANELLIDAE		
Pl. 26, figs.3a-b	*Cymatium* (*Monoplex*) *macrodon* (Valenciennes, 1832)	As *C. pileare* (Linnaeus, 1758) in **Emerson & Old (1963)** (AMNH Collection), Emerson (1978, 1989); as *C. pileare macrodon* in Emerson (1991, 1995); Henning & Hemmen, 1993; **Small, 1994** (live); **Schneider, 2004** (beach deposit); CASIZ 69681; SBMNH 358615 (live, wet collection), 358491; KLK 200818-200819 (voucher), 200820-200826, 210193-210197, 210206. Remarks:

	Cymatium (*Monoplex*) *macrodon* (Valenciennes, 1832) (continued)	Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection. See rejected records of *Cymatium pileare* and *C. vestitum* in Appendix 2 for more information. Emerson & Old (1963) did not consider Clipperton to be in the geographic range.
Pl. 26, figs.4a-b	*Cymatium* (*Monoplex*) *nicobaricum* (Röding, 1798)	**Hertlein & Allison, 1960b** (single specimen, fresh beach deposit); Sachet, 1962c; Salvat & Ehrhardt, 1970; Emerson, 1978, 1989, 1991, 1994; **Small, 1994** (empty shell, voucher, M. Small Collection). Remarks: Only two Clipperton records are known for this circumtropical species.
BURSIDAE		
Pl. 26, figs.5a-b	*Bursa* (*Bursa*) *asperrima* (Dunker, 1862)	Probably misidentified, as *B. cruentata* (Sowerby) in **Hertlein & Allison (1960b)** (live), Sachet (1962c), Salvat & Ehrhardt (1970); Beu, 1985; Emerson, 1991, 1994; CASIZ 69682, 85184, 103411, 103416, 103418, 103420, 103424, 103427, 104266; MNHN; SBMNH 210440, 358611 (live, wet collection); **Small, 1994**, 1995 (photo); KLK 200827-200831 (voucher), 200832-200838, 200842-200844, 210198-210201, 210207. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection. The most common of the *Bursa* species, living mostly at shallow depths to 20 m.
Pl. 26, figs.6a-b	*Bursa* (*Colubrellina*) *corrugata corrugata* (Perry, 1811)	SBMNH 353417 (voucher, empty shell); KLK 210466. Remarks: Only two empty shells of this species have been collected, one in 1994 and one in 2007.
Pl. 26, figs.7a-b	*Bursa* (*Colubrellina*) *granularis* (Röding, 1798)	**Morrison, 1949**; **Hertlein & Emerson, 1953** (CAS, PTC, hypotype 9884, photo); Hertlein & Strong, 1955; **Hertlein & Allison, 1960b** (fresh beach deposits); Sachet, 1962c; **Salvat & Ehrhardt, 1970**; Keen, 1971; **Perrin, 1977** (empty shells); Emerson, 1978, 1991, 1994, 1995; Kay, 1979; **Small, 1994**, as *B. granulata* in Small (1995); **Schneider, 2004** (beach deposit); SBMNH 358612 (live, wet collection), 358492; CASIZ 85177, 85188, 103417, 103425, 12905, 26485; SIO-BI M1486, M1503 (empty shells); MNHN; KLK 200839 (voucher), 200840-200841, 200845-200855, 210202-210205, 210207. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection.
CERITHIOPSIDAE		
Pl. 27, figs.1a-b	*Cerithiopsis* cf. *eiseni* Strong & Hertlein, 1939	KLK 200856 (voucher), 200857. Remarks: Empty shells were collected in 1994.
Pl. 27, figs.2a-b	*Cerithiopsis oaxacana* Hertlein & Strong, 1951	SBMNH 210443; KLK 200859 (voucher), 200860-200868, 210208-210210. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens were found live.
Pl. 27, figs.3a-b	cf. *Joculator* sp. 1	SBMNH 210442; KLK 200869-200870, 210211 (voucher), 210212. Remarks: Collected in 1994, 1998 and 2005 as empty shells. A glassy brown shell with a white protoconch.
TRIPHORIDAE		
Pl. 27, figs.4a-c	*Triphora dalli* Bartsch, 1907	SBMNH 358518; MNHN; KLK 200871-200873 (voucher), 200874-200876, 210213-210217. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens were found live and preserved in KLK wet collection.

Pl. 27, figs.5a-b	*Triphora* sp. 1	KLK 200877 (voucher). Remarks: One or more specimens were found live in 1998.
Pl. 27, figs.6a-b	*Triphora* sp. 2	KLK 200878 (voucher). Remarks: One or more specimens were found live in 1998.
Pl. 27, fig.7	*Triphora* sp. 3	KLK 200879 (voucher). Remarks: Collected as empty juvenile shells in 1998. The shell is glassy white and the protoconch is very similar to *Triphora* sp. 1 (Figure 5b).
Pl. 27, fig.8	Triphoridae sp. 1	KLK 210415 (voucher). Remarks: A single empty shell found in 2005. Placement to genus is uncertain for this Indo-Pacific species and it has never been reported from the TEP.
		NEOGASTROPODA
MURICIDAE		
Pl. 28, figs.1a-b	*Hexaplex princeps* (Broderip, 1833)	**Small, 1994** (as questionable identification); **Kaiser, 2001** (species id. confirmed); KLK 200880 (voucher). Remarks: A single crabbed juvenile specimen was collected in 1994. This rock-dwelling Panamic species is quite common at the other oceanic islands of the TEP.
Pl. 28, figs.2a-b	*Pterynotus* (*?Purpurellus*) *tripterus* (Born, 1778)	KLK 200881-200882 (voucher). Remarks: Collected in 1994 and 1998. Only two empty shells of this Indo-Pacific species have been found.
Pl. 28, figs.3a-b	*Attiliosa nodulosa* (A. Adams, 1855)	KLK 200883 (voucher), 210020. Remarks: Empty shells collected in 1994 and 2005.
Pl. 28, fig.4	*Attiliosa* sp. 1	KLK 210218 (voucher). Remarks: A single empty worn shell collected in 2005.
Pl. 28, figs.5a-b	*Favartia* (*Murexiella*) *exigua* (Broderip, 1833)	SBMNH 210437 (empty shells); MNHN; SIO-BI 1510 (fragment); CASIZ 26997 (live); KLK 200884-200890 (voucher), 200891-200894, 200896, 200909, 210219-210223. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection. Species *fide* B. Myers. Empty shells common.
Pl. 28, figs.6a-b	*Maculotriton serriale* (Deshayes, 1830)	KLK 210015 (voucher). Remarks: Worn empty shells of this Indo-Pacific species collected in 2005.
Pl. 28, figs.7a-b	*Pascula rufonotata* (Carpenter, 1864)	**Kaiser, 2001**; MNHN; SBMNH 358513 (empty shells); KLK 200897-200903 (voucher), 210029-210033. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection.
Pl. 29, figs.1a-b	*Phyllocoma scalariformis* (Broderip, 1833)	SBMNH 353523 (voucher, empty shell); MNHN; KLK 200904 (voucher), 200905-200908, 210224. Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live.
Pl. 29, figs.2a-b	*Drupa* (*Drupa*) *ricinus ricinus* (Linnaeus, 1758)	As *D. ricinus* (Linnaeus) in **Hertlein (1937)** (plesiotype 7060, CAS, PTC, photo); as *D. vicina* Linnaeus in **Bartsch & Rehder (1939)**; as *ricinus* in **Hertlein & Emerson (1953)** (hypotype 9885, CAS, PTC, photo), **(1957)** (empty shells); as *D. albolabris* in Keen (1958: 376), **Hertlein & Allison (1960b)** (live), Sachet (1962c); **Salvat & Ehrhardt (1970)** (?live), as *D. albolabris* in Keen (1971), Emerson & Cernohorsky (1973), **Perrin (1977)** (live); Emerson (1978, 1991, 1994); Kay (1979); **Small (1994)**; **Schneider, 2004** (beach deposit); SBMNH 358613 (live, wet collection); SIO-BI M1491, M1499, M4036, M1501 (live); SDNHM 242271, 42914, 50060, 52045, 59092 (live); CASIZ 103399, 103440; MNHN; KLK 200910-200911 (voucher), 200912-200918, 210225-210226. Remarks: Collected in

	Drupa (*Drupa*) *ricinus ricinus* (Linnaeus, 1758) (continued)	1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection. Very common intertidally and to 20 m.
---	*Mancinella speciosa* (Valenciennes, 1832)	As *Thais* in **Hertlein & Allison (1960b)** (worn beach deposits), Sachet (1962c), Salvat & Ehrhardt (1970), Emerson (1994), Small (1994); Kaiser, 2001.
Pl. 29, figs.3a-b	*Morula* (*Morula*) *uva* (Röding, 1798)	As *Drupa morus* Lamarck in **Hertlein (1937)** (CAS, PTC plesiotype 7062, photo); as *M. nodus* Bory St. Vincent in **Bartsch & Rehder (1939)**; **Hertlein & Emerson**, 1953, **1957** (live); Keen, 1958: 376, 1971; **Hertlein & Allison, 1960b** (live); Sachet, 1962c; Salvat & Ehrhardt, 1970; Emerson, 1978, 1991, 1994; **Small, 1994**; **Schneider, 2004** (beach deposit); CASIZ 103408-103410, 103422- 103423 (live); MNHN; SIO-BI M4104, M1492, M1500; as *Sistrum morus* in SDNHM 24203, 42915, 59097 (empty shells); SBMNH 210431, 358614 (live, wet collection), 358503; KLK 200919-200921 (voucher), 200922-200930, 210227-210233. Remarks: Collected in 1994, 1998, 2005 (also in lagoon) and 2007. One or more specimens of this common species found live and preserved in KLK wet collection.
Pl. 29, figs.4a-b	*Nassa serta* (Bruguière, 1789)	As *Nassa francolinus* in **Hertlein & Allison (1960b)** (empty shells, worn), Sachet (1962c); as *Nassarius francolinus* in **Salvat & Ehrhardt (1970)**; Emerson, 1978; may be the Pacific Ocean form of *N. francolinus* (Kool, 1993); Emerson, 1991, 1994; SBMNH 358541 (live); KLK 200931-200933 (voucher), 200934-200938, 210234-210236. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found living in 9-27 m on undersurfaces of coral heads and preserved in KLK wet collection.
Pl. 29, figs.5a-b	*Plicopurpura pansa* (Gould, 1853)	As *Purpura patula pansa* in **Hertlein & Allison (1960b)** (single live specimen), Sachet (1962c), Salvat & Ehrhardt (1970); as *Plicopurpura patula pansa* in Emerson (1994), Small (1994); **Kaiser, 2001**; KLK 200939 (voucher). Remarks: This species is not well established at Clipperton, a single live specimen was reported in 1960 and five specimens were found live in 1998. No beach deposits are reported.
Pl. 29, figs.6a-b	*Stramonita biserialis* (Blainville, 1832)	As *Thais haemastoma biserialis* (Blainville, 1832) in **Hertlein & Allison (1960b)** (worn beach deposits), Sachet (1962c); as *Thais* in **Salvat & Ehrhardt (1970)**, Emerson (1994); Small, 1994; Kaiser, 2001; KLK 210027 (voucher). Remarks: A single worn beach deposit found in 2005 and one in 2007.
Pl. 29, figs.7a-b	*Tribulus planospira* (Lamarck, 1822)	As *Thais* in Smith (1939), **Hertlein & Emerson (1957)** (worn beach deposits), **Hertlein & Allison (1960b)** (live), Sachet (1962c), **Salvat & Ehrhardt (1970)**, Emerson (1994), **Small (1994)** (beach deposit); **Schneider, 2004** (beach deposit); **Kaiser, 2001**; CASIZ 2013 (Talmadge Coll.), 48937; KLK 200940 (voucher), 200941, 210237. Remarks: The number of live specimens reported by Hertlein & Allison (1960b) in 1958 is not known. A single live juvenile specimen collected intertidally in 1998. Beach deposits collected in 1994, 1998, 2005 and 2007. Clipperton specimens are unusually small for the species and not common in the beach drift.
Pl. 30, figs.1, 2	*Coralliophila* (*Coralliophila*) *macleani* Shasky, 1970	SBMNH 210430; KLK 200996 (voucher, empty shell), 200998 (voucher). Remarks: A single adult specimen was collected empty in 1998 and several live specimens found in 1994 and 2005.

Pl. 30, figs.3a-b	*Coralliophila* (*Coralliophila*) *neritoides* (Lamarck, 1816)	As *C. violacea* (Kiener, 1835) in **Hertlein & Allison (1960b)** (live), Sachet (1962c), **Salvat & Ehrhardt (1970)**; Keen, 1971; Emerson, 1965, 1978; **Perrin, 1977** (live); Kay, 1979; Emerson, 1991, 1994, 1995; **Small, 1994**; Glynn et al., 1996; Hickman & Finet, 1999; **Kaiser, 2001**, 2002; SBMNH 358616 (live, wet collection), 358499; CASIZ 103457, 103415, 103435, 103441; SDNHM 42895 (empty shells); MNHN; KLK 200942-200944 (voucher, with egg capsule in aperture), 200995-200954, 210239-210245. Remarks: Collected live in 1994, 1998, 2005 and 2007. Specimens of this common species are preserved in KLK wet collection. Living on reef-building corals at SCUBA depths of 3 to 20 m.
Pl. 30, figs.4a-b	*Coralliophila* (*Pseudomurex*) *parva* (E.A. Smith, 1877)	**Kaiser, 2001**; SBMNH (empty shells) 210439, 358500; MNHN; KLK 200955-200961 (voucher, with dried egg capsule in aperture), 200962-200963, 210246-210248. Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live and preserved in KLK wet collection.
Pl. 30, figs.5a-b	*Latiaxis tosanus* Hirase, 1908	KLK 200964 (voucher). Remarks: A single live specimen collected in 1998 on undersurface of coral plate at 32 m (110 ft).
Pl. 30, figs.6, 7	*Reliquiaecava robillardi* (Liénard, 1870)	As *Magilus* in **Bartsch & Rehder (1939)**, Hertlein & Emerson (1953), **Hertlein & Allison (1960b)** (worn beach deposits), Sachet (1962c), **Salvat & Ehrhardt (1970)**, Emerson (1978); *robillardi* is restricted to Mauritius in Kosuge & Suzuki (1985); Emerson, 1991, 1994; **Small, 1994**; Glynn et al., 1996; **Kaiser, 2001**; LACM 58-7 (single empty shell); MNHN; SDNHM 42932, 71589 (empty shells); SBMNH 358631 (live, wet collection), 358501; KLK 200981-200986, 200988-200989 (voucher, in situ), 200990-200995, 210250-210254. Remarks: Collected in 1994, 1998, 2005 (also in lagoon) and 2007. One or more specimens found living in bore holes of live *Pavona minuta* Wells, 1956. These specimens with egg sacs in the aperture are preserved in KLK wet collection.
Pl. 31, figs.1, 2a-b	*Rhizochilus antipathum* Steenstrup, 1850	**Kaiser & C. Hertz, 2001** (live, photos); MNHN; KLK 210255-210257. Remarks: Collected in 1998, 2005 and 2007. A very cryptic species found living on the lower stems of the black coral host *Antipatharia* sp., 27-55 m. Several specimens attached to host and preserved in KLK wet collection.
Pl. 31, figs.3a-b, 4	*Quoyula madreporarum* (Sowerby, 1834)	**Hertlein & Emerson, 1957** (single live specimen); **Hertlein & Allison, 1960b** (live); Sachet, 1962c; Salvat & Ehrhardt, 1970; Emerson, 1978, 1983, 1991, 1994, 1995; Glynn et al., 1996; **Kaiser, 2001**; SBMNH 358502; LACM 58-7 (empty shells); MNHN; SIO-BI M1504 (live); SDNHM 4294 (empty shells); KLK 200965, 200967, 200969 (voucher), 200970-200980, 210258-210262. Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live and preserved in KLK wet collection. The author considers *Q. madreporarum* and *Q. monodonta* as separate species.
Pl. 31, fig.5	*Quoyula monodonta* (Blainville, 1832)	MNHN; KLK 200969 (two vouchers), 210263. Remarks: Empty shells found in 1998 and 2005.
Pl. 31, figs.6a-b, 7a-b	Coralliophilinae sp. 1	KLK 200997 (voucher, empty shell), 200999, 210044 (voucher, juvenile). Remarks: Collected in 1998 and 2005 as empty shells. Compare with Coralliophilidae sp. 1 (KLK 201466 [+], Isla de Malpelo) in Kaiser & Bryce (2001). Protoconch has a light pink-orange color and this species is possibly a *Babelomurex*. The same species occurs at Islas Galápagos.

Pl. 31, fig.8	Coralliophilinae sp. 2	KLK 210249 (voucher). Remarks: A single specimen taken live from underside of coral head at 18 m in 2005 and preserved in KLK wet collection.
BUCCINIDAE		
Pl. 32, figs.1a-b	*Clivipollia fragarius* (Wood, 1828)	As *fragaria* in Weaver (1964); as *Peristernia thaanumi* in Hertlein & Allison (1966) (live); as *fragaria* in De Vaul (1967); as *Peristernia carolinae* (Kiener, 1840) in **Salvat & Ehrhardt (1970)** (live); as *Clivipollia costata* in Kay (1979); Emerson, 1994; SDNHM 42923 (empty shells); CASIZ 104282-104284; MNHN; SBMNH 358630 (live, wet collection), 358542; KLK 201000, 201013 (voucher), 201014-201018; 210264-210269. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection.
Pl. 32, figs.2a-b, 3a-b	*Colubraria* (*Colubraria*) *ochsneri* Hertlein & Allison, 1968	As *Colubraria* sp. in **Hertlein & Allison (1966)** (beach deposits, crabbed specimens); **Hertlein & Allison, 1968** (CAS, DGTC, holotype 37126, empty shell, photo, paratypes 14102-14104, 37127-37129, type locality); **Salvat & Ehrhardt, 1970**; Keen, 1971; González, 1993; Emerson, 1994; CASIZ 104269-104273, paratypes CASIZ 63799-63800; J.Hertz & Kaiser, 1998a; Hickman & Finet, 1999; MNHN; SDNHM 42930 (empty shells); SBMNH 358629 (live, wet collection), 358519 (empty shells); KLK 201019-201024 (voucher), 201025-201043, 210270-210278. Remarks: Collected in 1994, 1998, 2005 and 2007. Several specimens are preserved in KLK wet collection. This somewhat common species was described from Clipperton from empty beach shells. The first live collected specimen, including the operculum, was figured in J. Hertz & Kaiser (1998a). *Colubraria ochsneri* is an inter-island endemic, and is found at all five of the oceanic island groups of the TEP.
Pl. 32, figs.4a-b	*Colubraria* cf. *lucasensis* Strong & Hertlein, 1937	KLK 210279 (voucher), 210280-210281. Remarks: Collected in 1994, 1998 and 2005 as empty juvenile shells. This species has a larger glassy protoconch and more defined cancellate sculpture on the remaining whorls than the more common *C. ochsneri*. Only one juvenile and several protoconchs with prodissoconchs were found.
COLUMBELLIDAE		
Pl. 32, figs.5a-b, 6a-b	*Mitrella* sp. 1	SBMNH 358516; MNHN; KLK 201044-201048 (voucher), 201049, 210282-210288. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection. Most likely a new species that is fairly common and found living on undersurfaces of coral rock. The small species is usually found by shaking and brushing.
Pl. 32, figs.7a-b	*Mitrella* sp. 2	KLK 210290 (voucher). Remarks: A single empty juvenile shell collected in 2005.
Pl. 32, figs.8a-b	*Mitrella* sp. 3	KLK 210291(voucher). Remarks: A single fragment collected in 2005.
Pl. 32, fig.9	*Sincola gibberula* (Sowerby, 1832)	**Schneider, 2004** (photo); SBMNH 80288 (voucher). Remarks: A single worn beach deposit collected in 2003.
NASSARIIDAE		

Pl. 33, figs.1a-b, 2	*Nassarius catallus* (Dall, 1908)	**Hertlein & Emerson, 1953** (UCMP, TC hypotypes 33343-33346, ?live, depth 100-200 fm, photo); Sachet, 1962c; Salvat & Ehrhardt, 1970; Emerson, 1994; KLK 201050 (vouchers). Remarks: A single live juvenile and several empty shells trawled in 1998. Collected from depths of 55-113 m.
FASCIOLARIIDAE		
---	*Pleuroploca princeps* (Sowerby, 1825)	As *Fasciolaria* in **Hertlein & Allison (1966)** (single beach deposit). Salvat & Ehrhardt (1970), Emerson (1994). Remarks: Unique record, not recorded since 1958. Accepted here with reservation.
---	*Latirus socorroensis* Hertlein & Strong, 1951	As aff. *L. socorroensis* in **Hertlein & Allison (1966)** (single beach deposit); as *L. clippertonensis* n. sp. in **Hertlein & Allison (1968)** (UC, holotype 37130, photo), **Salvat & Ehrhardt (1970)**; synonymized in Keen (1971); Emerson, 1994, 1995. Remarks: No specimens, live or empty, have been reported since 1970.
HARPIDAE		
Pl. 33, figs.3a-b	*Harpa gracilis* Broderip & Sowerby I, 1829	**Hertlein & Allison, 1960b** (worn beach deposit); Sachet, 1962c; **Salvat & Ehrhardt, 1970**; Rehder, 1973 (CAS, MHNP); Emerson, 1978, 1990, 1991, 1994; Walls, 1980; **Small, 1994** (empty shells), 1995; Okon, 2004; **Kaiser, 2005** (color image of live specimens figured, KLK 210296); MNHN; SBMNH 358497-358498; KLK 201051-201055, 201057-201058 (voucher), 210293-210296. Remarks: Collected in 1994, 1998, 2005 and 2007. Two live specimens found the first time in 2005, buried in fine, silty sand under a coral slab. They are preserved in the KLK wet collection.
CYSTICIDAE		
Pl. 33, fig.4	*Granula* sp. 1	KLK 201059 (voucher). Remarks: A single empty juvenile collected in 1994.
Pl. 33, fig.5	*Granulina* cf. *margaritula* (Carpenter, 1857)	KLK 201060 (voucher). Remarks: A single live juvenile collected in 1994.
MITRIDAE		
Pl. 33, figs.6a-b	*Mitra* (*Mitra*) *papalis* (Linnaeus, 1758)	As *M. mitra papalis* in **Hertlein (1937)** (CAS, PTC, 7052, photo); Hertlein & Emerson, 1953; **Hertlein & Allison, 1960b** (fresh and worn beach deposits); Sachet, 1962c; **Salvat & Ehrhardt, 1970**; Keen, 1971; Cernohorsky, 1976; **Perrin, 1977** (empty shells); Cosel, 1977; Emerson, 1978, 1991, 1994; Kay, 1979; **Small, 1994**, 1995; **Schneider, 2004** (beach deposit); CASIZ 103419, 103421; SDNHM 42902 (empty shells); MNHN; SBMNH 358634 (live, wet collection), 358505; KLK 201397, 201424, 201062-201063 (voucher), 201064-201074, 210297. Remarks: Collected in 1994, 1998, 2005 and 2007. Several specimens found live in sand among the coral heads.
Pl. 33, figs.7a-b	*Mitra* (*Dibaphus*) *edentula* Swainson, 1823	**Hertlein & Allison, 1960b** (worn beach deposits): Sachet, 1962c; **Salvat & Ehrhardt, 1970**; Cernohorsky, 1976; Cosel, 1977; Emerson, 1978, 1991, 1994; KLK 210040 (voucher). Remarks: A single beach-worn empty shell of this Indo-Pacific species collected from the high intertidal in 2005.
---	*Mitra* (*Nebularia*) *effusa* Broderip, 1836	**Hertlein & Allison, 1960b** (moderately fresh beach deposits); Sachet, 1962c; Salvat & Ehrhardt, 1970; Cernohorsky, 1976; Emerson, 1994; Small, 1994. Remarks: No living specimens have ever been recorded at Clipperton.

Pl. 34, figs.1a-b	*Mitra* (*Nebularia*) *ferruginea* Lamarck, 1811	**Hertlein & Allison, 1960b** (fresh beach deposits); Sachet, 1962c; **Salvat & Ehrhardt, 1970**; Cernohorsky, 1976; Cosel, 1977; Emerson, 1978, 1991, 1994; **Small, 1994**; SBMNH 358627 (live, wet collection), 358504; MNHN; KLK 201076-201082 (voucher), 201083-201087, 210298-210300. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection.
Pl. 34, figs.2a-b	*Mitra* (*Nebularia*) *rupicola* Reeve, 1844	As *M.* cf. *lignaria* Reeve, 1844 in **Hertlein & Allison (1960b)** (worn beach deposits), Sachet (1962c); Emerson, 1994; Small, 1994; KLK 201088 (voucher). Remarks: A single live specimen was collected in 1998. *Mitra rupicola* as a valid species and *M. lignaria* as a synonym (Salisbury, 1992a, b).
---	*Mitra (Strigatella) litterata* Lamarck, 1811	As *Strigatella* in **Salvat & Ehrhardt (1970)** (?empty shell), Cosel (1977), Emerson (1978, 1991, 1994). Remarks: The single vouchered specimen in Salvat & Ehrhardt (1970) could not be located in the MNHN, the repository for the Clipperton Bougainville Expeditions (pers. comm., P. Maestrati, 2005).
Pl. 34, fig 3	Mitridae sp. 1	KLK 210301 (voucher). Remarks: Collected as an empty juvenile shell in 2005.
Pl. 34, figs.4a-b	Mitridae sp. 2	KLK 210302 (voucher). Remarks: Collected as an empty juvenile shell in 2005. Possible *Subcancilla* sp.
CONIDAE		
---	*Conus* (*Conus*) *brunneus* Wood, 1828	Dall, 1910; Hanna & Strong, 1949; Hertlein & Emerson, 1953; **Hertlein & Allison, 1960a** (empty shell); Sachet, 1962c; Hanna, 1963; Salvat & Ehrhardt, 1970; Emerson, 1994; USNM 149332 (Coll. Arnheim, 1897). Remarks: Dall (1910) reported *C. brunneus* from Clipperton, but his remarks (p. 227) state *C. diadema* Sowerby is a variety of *C. brunneus* Mawe. This may be where the record was first erroneously stated, as *Conus diadema* is common at Clipperton.
Pl. 34, figs.5a-b	*Conus* (*Conus*) *chaldaeus* (Röding, 1798)	As *C. ebraeus vermiculatus* Lamarck in **Hertlein (1937)** (CAS, PTC plesiotype 7058, empty shells, photo), Hertlein & Emerson (1953); as *C. ebraeus* Linnaeus (var. *chaldeus* Bolten) in Hanna & Strong (1949) (CAS, PTC hypotype 7058, empty shells, photo); as *C. ebraeus chaldaeus* Röding in **Hertlein & Emerson (1957)** (beach deposits); Keen, 1958: 480; **Allison, 1959** (live); Sachet, 1962c; as *C. ebraeus* in Hanna (1963) (CAS, GTC hypotype 12309, empty shells, photo); **Salvat & Ehrhardt, 1970**; Keen, 1971; **Perrin, 1977** (live); Anders, 1978; Emerson, 1978, 1983, 1991, 1994; Kay, 1979; Coomans, Moolenbeek & Wills, 1983; **Small, 1994** (live), 1995; **Schneider, 2004** (beach deposit); CASIZ 103442; MNHN; SIO-BI M3047, M1505 (empty shells); SDNHM 42890, 59608 (empty shells); SBMNH 358607 (live, wet collection), 358494; KLK 201089-201090 (voucher), 201091-201095, 210303-210305. Remarks: Collected in 1994, 1998, 2005 (also in lagoon) and 2007. One or more specimens found live and preserved in KLK wet collection.
Pl. 34, figs.6a-b	*Conus* (*Conus*) *diadema* Sowerby, 1834	**Allison, 1959** (live); Sachet, 1962c; **Salvat & Ehrhardt, 1970**; Coomans, Moolenbeek & Wills, 1985; Emerson, 1994, 1995; **Small, 1994**; CASIZ 103452, 103455, 103476, 103478-103479, 103483, 103485, 85071; MNHN; SIO-BI M1506 (live); SDNHM 42887 (empty shells); SBMNH 358608-358609 (live, wet collection); KLK

	Conus (*Conus*) *diadema* Sowerby, 1834 (continued)	201096-201104 (voucher), 201105-201109, 210306-210310. Remarks: Collected in 1994, 1998, 2005 and 2007. Several specimens found live and preserved in KLK wet collection. An unusual abundance of juveniles in April 2007.
Pl. 34, figs.7a-b	*Conus* (*Conus*) *ebraeus* Linnaeus, 1758	**Hertlein, 1937** (CAS, PTC plesiotype 7056, empty shells, photo); **Hanna & Strong, 1949** (CAS, PTC hypotype 7056, photo, empty shells); **Hertlein & Emerson, 1953** (CAS, PTC hypotype 9886, photo), 1957 (empty shells); Keen, 1958; **Allison, 1959** (live); Sachet, 1962c; Hanna, 1963 (CAS, GTC hypotype 12307-12308, photo); Houbrick, 1968; Emerson, 1968, 1978, 1991, 1994; **Salvat & Ehrhardt, 1970**; Keen, 1971; **Perrin, 1977** (live); Anders, 1978; Kay, 1979; Coomans, Moolenbeek & Wills, 1986; **Small, 1994** (live), 1995; **Schneider, 2004** (beach deposit); CASIZ 63464, 63467-63468, 85077-85078, 103453, 103456, 103469; SIO-BI M1487, M1507, M3027 (live); MNHN; SDNHM 225131, 42889, 59617 (empty shells); SBMNH 358606 (live, wet collection); KLK 201110-201114 (voucher), 201115-201117, 210311-210314. Remarks: Collected in 1994, 1998, 2005 and 2007. Several specimens found live and preserved in KLK wet collection. Empty shells found in sediment in lagoon in 2005. Most live specimens are heavily incrusted with coralline algae.
Pl. 35, figs.1a-b	*Conus* (*Conus*) *tiaratus* Sowerby, 1833, *ex* Broderip MS	As *C. miliaris* Hwass in **Dall (1910)**; as *C. roosevelti* n. sp. in **Bartsch & Rehder (1939)** (USNM type 472854, ?live, photo); both *miliaris* and *roosevelti* are junior synonyms in Hanna & Strong (1949) where they failed to cite Clipperton in the "range"; **Hertlein & Emerson**, 1953, **1957** (beach deposits); **Allison, 1959** (live); Sachet, 1962c; **Salvat & Ehrhardt, 1970**; **Perrin, 1977** (live); Kohn, 1992; Emerson, 1994, 1995; **Small, 1994**, 1995 (live, photo); **Schneider, 2004** (beach deposit); CASIZ 85118, 103465, 103468, 103454, 103462, 103464, 103471-103473, 103480; MNHN; SIO-BI M1488, M1508 (live); SBMNH 358605, 358610 (live, wet collection); KLK 201118-201127 (voucher), 201128-201134, 210315-210320. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection. A common shallow-water species living among coral rocks on sand. Clipperton specimens are a pink color form i.e. *Conus roosevelti* Bartsch & Rehder, 1939.
Pl. 35, figs.2a-b	*Conus* (*Chelyconus*) *purpurascens* Sowerby, 1833, *ex* Broderip MS	As *C. purpurascens* var. *regalitatis* Sowerby, 1834, in **Dall (1910)**; synonymized *C. purpurascens* var. *regalitatis* with *C. purpurascens* in Hanna & Strong (1949), Hanna (1963); as *C. purpurascens regalitatis* Dall in **Hertlein & Emerson** (1953, **1957**) (beach deposits), **Allison (1959)** (live), Sachet (1962c); **Salvat & Ehrhardt, 1970**; **Perrin, 1977** (empty shells); Emerson, 1994, 1995; **Small, 1994** (live), 1995 (live, photo); **Schneider, 2004** (empty shell); USNM 149331, 631729, 634628; CASIZ 103444, 103451, 103463, 103466-103467, 103474, 103484; MNHN; SDNHM 42888 (dead); SBMNH 358600-358603 (live, with eggs, wet collection); KLK 201135-201138 (voucher), 201139-201143, 201399-201404, 210321-210326. Remarks: Collected in 1994, 1998, 2005 and 2007. Several specimens found live with egg mass and preserved in KLK wet collection. Shells congregate when brooding. As many as 30 adults and sub-adults have been found on light pink egg masses under a single coral head lying on sand.

---	*Conus* (*Leptoconus*) *gradatus* Wood, 1828, *ex* Mawe MS	**Hanna & Strong, 1949** ("Collecting stations"); Hertlein & Emerson, 1953; Keen, 1958; **Hertlein & Allison, 1960a** (empty shell); Sachet, 1962c; Salvat & Ehrhardt, 1970; Nybakken, 1971; Emerson, 1994. Remarks: *Nomen dubium* in Kohn (1992). Valid species, Baja California and México in Lauer (1995). Unique record, accepted here with reservation.
Pl. 35, figs.3a-b	*Conus* (*Leptoconus*) *tessulatus* Born, 1778	**Hertlein & Allison, 1960a** (empty shell); Sachet, 1962c; Salvat & Ehrhardt, 1970; Emerson, 1978, 1983, 1991, 1994, 1995; KLK 201144 (voucher). Remarks: An empty light-colored shell collected in 1998 and one empty shell in 2007. One live specimen was found on JLE-2005 and not seen by author. This Indo-Pacific species is by far more established at Isla del Coco and in the Golfo de California than it is at Clipperton.
Pl. 35, figs.4a-b	*Conus* (*Stephanoconus*) *nux* Broderip, 1833	**Perrin, 1977** (?live); **Small, 1994**, 1995 (live); Emerson, 1995; CASIZ 103482; SIO-BI 7176 (?live); MNHN; SBMNH 358604 (live, wet collection), 358543; KLK 201145 (voucher), 201146-201150. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection.
TEREBRIDAE		
Pl. 35, fig.5	*Terebra crenulata* (Linnaeus, 1758)	As *T. crenulata interlineata* Deshayes, 1859, in **Hertlein & Allison (1960b)** (fresh dead), Sachet (1962c), Salvat & Ehrhardt (1970), Emerson (1978); Emerson, 1991, 1994, 1995; **Small, 1994** (empty shells), 1995; CASIZ 103443; SBMNH 358537-358538 (empty shells); MNHN; KLK 201151 (voucher), 201152-201156, 210327, 210467 (live). Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens were found live and preserved in KLK wet collection.
TURRIDAE		
Pl. 36, figs.1a-b	*Clathurella rigida* (Hinds, 1843)	**J. Hertz, 2000** (K.L. Kaiser Collection); **Schneider, 2004** (worn beach deposit, photo); SBMNH 358540 (empty shells); LACM 58-7 (empty shell); MNHN; KLK 201157-201158 (voucher), 201159-201162, 210328-210334. Remarks: Collected in 1994, 1998, 2005 and 2007. One or more specimens found live and preserved in KLK wet collection. Clipperton specimens are smaller and lighter in color. The largest mature Clipperton specimen in the KLK Coll. is 4.7 mm.
Pl. 36, fig.2	*Kurtziella* (*Kurtziella*) *plumbea* (Hinds, 1843)	KLK 201163 (voucher). Remarks: A single empty shell was collected in 1998.
Pl. 36, figs.3, 4a-b	*Microdaphne trichodes* (Dall, 1919)	KLK 210043 (voucher). Remarks: Collected in 1994 and 2005. Possibly one or more found live.
Pl. 36, figs.5a-b	Turridae sp. 1	KLK 210336 (voucher). Remarks: Collected as empty shells in 1998 and 2005.
Pl. 36, figs.6a-b	Turridae sp. 2	KLK 201208 (voucher). Remarks: A single empty shell found in 1998.
HETEROSTROPHA		
OMALOGYRIDAE		
Pl. 36, figs.7a-c	*Omalogyra* sp. 1	**Hertlein & Allison (1968)** (UCMP, ITC hypotype 37137, ?empty shell [0.425 mm], undescribed, line drawing); KLK 201164 (voucher), 201165-201171, 210337-210338. Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live. Compare

	Omalogyra sp. 1 (continued)	with *Omalogyra* sp. 1 (KLK 201668) in Kaiser & Bryce (2001), Isla de Malpelo.
TOFANELLIDAE		
Pl. 18, figs.6a-b	*Graphis* sp. 1	KLK 201192 (voucher) - 201194. Remarks: Collected in 1994 and 1998. Live specimens with a dark suture line on transparent protoconch. Compare with *Graphis* sp. 1 (KLK 201691) in Kaiser & Bryce (2001), Isla de Malpelo. Also occurs at Isla del Coco, Costa Rica.
ARCHITECTONICIDAE		
---	*Heliacus* (*Teretropoma*) *infundibuliformis perrieri* (Rochebrune, 1881)	As *H. infundibulum strigata* (Hanley, 1863) in **Hertlein & Allison (1966)** (single specimen, beach deposit); as *H. infundibuliformis strigatus* (Hanley) in **Hertlein & Allison (1968)** (UCMP, ITC hypotype 37123, line drawing); as *H. infundibuliformis* (Hanley) in Salvat & Ehrhardt (1970); as *H. perrieri* (Rochebrune) in Robertson *in* Keen (1971), Emerson (1994); KLK 210419 (fragment). Remarks: A single partial specimen of questionable id. collected in 1998. No mention of this species occurring at Clipperton in Bieler (1993).
Pl. 37, figs.1a-d	*Heliacus* (*Torinista*) *mazatlanicus* Pilsbry & Lowe, 1932	MNHN; KLK 201172 (voucher). Remarks: Collected in 1998, 2005 and 2007. Three specimens were found in 2007 living on a zoanthinarian colony and preserved in KLK wet collection.
Pl. 37, figs.2a-d	*Heliacus* sp. 1	KLK 201173-201175 (voucher), 210342-210343. Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live.
Pl. 37, figs.3a-d	Architectonicidae sp.1	KLK 210344 (voucher). Remarks: Collected as an empty shell in 2005.
Pl. 37, figs.4a-b	Architectonicidae sp. 2	KLK 210345 (voucher). Remarks: Collected as empty shells in 2005.
Pl. 37, figs.5a-b	Architectonicidae sp. 3	KLK 210346 (voucher). Remarks: Collected as empty shells in 2005.
PYRAMIDELLIDAE		
Pl. 38, figs.1a-b	*Iselica kochi* Strong & Hertlein, 1939	KLK 201178 (voucher). Remarks: A single empty shell collected in 1994.
Pl. 38, figs.2a-b	*Iselica* sp. 1	KLK 201177 (voucher). Remarks: A single ?live specimen collected in 1994. Compare with *Iselica* sp. 1 (KLK 201675) in Kaiser & Bryce (2001), Isla de Malpelo.
Pl. 38, figs.3a-b	*Odostomia* sp. 1	KLK 201186 (voucher), 210348. Remarks: Collected in 1994 and 1998. One or more specimens found live. Voucher specimen crushed on SEM stub.
Pl. 38, figs.4a-b	*Chrysallida limbaughi* (Hertlein & Allison, 1968)	As *Odostomia* in **Hertlein & Allison (1968)** (UCMP, ITC holotype 37124, ?live [no mention of operculum in description, line drawing, type locality]), Salvat & Ehrhardt (1970), Keen (1971), González (1993), Emerson (1994); LACM 58-7 (empty shells); MNHN; Berkeley B-6120 (empty shells, sub-adult); SBMNH 210429; KLK 201179-201180 (voucher), 201181-201184, 210349-210351. Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live. Raised from subgenus in Fretter & Graham (1986).
Pl. 38, figs.5a-b	*Herviera gliriella* (Melvill & Standen, 1896)	MNHN; KLK 201187, 210352 (voucher). Remarks: An Indo-Pacific species collected in 1994 and 2005 as empty shells.

Pl. 38, fig.6	*Miralda* sp. 1	KLK 201185 (voucher). Remarks: A single empty shell found in 1998.
Pl. 38, figs.7a-b	Odostomiinae sp. 1	Berkeley B-6120 (empty shell); KLK 201198 (voucher). Remarks: A single empty shell found in 1998. Compare image with *Odostomia* sp. 4 (KLK 201686) in Kaiser & Bryce (2001), Isla de Malpelo. Voucher specimen lost from SEM stub.
Pl. 39, figs.1a-b	Odostomiinae sp. 2	KLK 201195 (voucher). Remarks: A single empty shell found in 1994. Spiral lirations on protoconch.
---	Odostomiinae sp. 3	KLK 201196 (voucher, live). Remarks: Dredged in 1998. Spiral lirations on protoconch are less than in Odostomiinae sp. 2. Vial with specimen misplaced.
Pl. 39, figs.2a-c	*Turbonilla* (*Dunkeria*) *clippertonensis* Hertlein & Allison, 1968	**Hertlein & Allison, 1968** (UCMP, ITC holotype 37125, ?empty shell [no mention of operculum in description], line drawing, type locality); Salvat & Ehrhardt, 1970; Keen, 1971; González, 1993; Emerson, 1994; SBMNH 210441 (empty shells); Berkeley B-6120, B-6101a (live); MNHN; KLK 201188 (voucher), 201189-201191, 210353. Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live. Depth record from tangle net in 1998 is 63 m.
Pl. 39, figs.3a-b	Pyramidellidae sp. 1	LACM 58-7 (empty shells); KLK 201197 (voucher). Remarks: A single empty shell found in 1998.
ORBITESTELLIDAE		
Pl. 39, figs.4a-c	*Orbitestella* sp. 1	LACM 58-7 (empty shells); Berkeley B-6120 (empty shells); KLK 200176, 201180, 201199 (voucher), 201200, 210354-210355. Remarks: Collected in 1994, 1998 and 2005. One or more specimens found live.
OPISTHOBRANCHIA		
AGLAJIDAE		
Pl. 42, fig.1	*Navanax aenigmaticus* (Bergh, 1894)	CASIZ 98775 (leg. H.W. Chaney). Remarks: A single specimen of this circumtropical species was photographed and collected in 1994.
CAVOLINIIDAE		
Pl. 39, figs.5a-b	*Cavolinia uncinata* (Rang, 1829)	MNHN; KLK 210356-210357 (voucher). Remarks: Collected as empty shells in 2005.
Pl. 39, fig.6	*Cavolinia* cf. *tridentata* (Niebuhr, 1775, *ex* Forskäl MS)	KLK 200429, 210358 (voucher). Remarks: Collected as empty shells in 1994 and 2005.
---	cf. *Clio* sp. 1	KLK 210360. Remarks: Collected as a fragment in 2005.
Pl. 40, fig.1	*Diacria* cf. *quadridentata quadridentata* (Blainville, 1821, *ex* Lesueur MS)	KLK 200449, 210364 (voucher). Remarks: Collected as empty shells in 1998 and 2005.
Pl. 40, fig.2	*Diacria* sp. 1	KLK 210365 (voucher), 210366-210367. Remarks: Collected as empty shells in 2005.
---	*Creseis* cf. *acicula* (Rang, 1828)	KLK 200459. Remarks: Collected as fragments in 1998.
---	cf. *Hyalocylis striata* (Rang, 1828)	Berkeley B-6120 (fragment).
---	Cavoliniidae sp. 1	KLK 200462-200463. Remarks: Collected as fragments in 1994.
LIMACINIDAE		
Pl. 40, fig.3	*Limacina* (*Thilea*) *inflata* (d'Orbigny, 1836)	SBMNH 358546 (empty shells); KLK 200319 (voucher), 200412, 210361. Remarks: Collected in 1994, 1998 and 2005 as empty shells

Pl. 40, fig.4	*Limacina* (*Munthea*) *bulimoides* (d'Orbigny, 1836)	KLK 200428 (voucher). Remarks: Collected in 1998 as empty shells.
---	*Limacina* (*Munthea*) *trochiformis* (d'Orbigny, 1836)	KLK 200413, 210362. Remarks: Collected in 1998 and 2005 as empty shells.
APLYSIIDAE		
Pl. 42, fig.2	*Stylocheilus striatus* (Quoy & Gaimard, 1824)	CASIZ 115689; LACM (leg. K.L. Kaiser and A. Hermosillo). Remarks: A circumtropical species collected in 1994, 1998 and 2007. Changed from *S. longicauda* to *S. striatus* by Behrens & Hermosillo (2005).
PLEUROBRANCHIDAE		
Pl. 42 fig.3	*Berthella martensi* (Pilsbry, 1896)	LACM (leg. K.L. Kaiser). Remarks: A single specimen of this Indo-Pacific species was collected in 2005.
Pl. 40, figs.5a-b	*Berthella* sp. 1	KLK 200242 (voucher), 200313, 200317, 210368, 210374 (empty shells). Remarks: Collected in 1994, 1998 and 2005 as empty shells.
Pl. 40, figs.6a-b	*Berthella* sp. 2	KLK 210372 (voucher), 200246, 210369. Remarks: Collected as empty shells in 1994 and 2005. *Berthella* sp. 2 has the same shape as *Berthella* sp. 1 except that the protoconch is smaller.
Pl. 42, fig.4	*Berthellina ilisima* (Marcus & Marcus, 1967)	As *engeli* in **Debelius (1996)** (color photo), **Kaiser & Bryce (2001)**; CASIZ 115688 (leg. K.L. Kaiser), CASIZ 98777, 98782, 98785, 98792, 98803 (leg. R.J. Van Syoc); LACM (leg. K.L. Kaiser [KLK 200242, 200246] and A. Hermosillo). Remarks: This common tropical eastern Pacific species was collected in 1994, 1998, 2005 and 2007. Synonymized by Behrens (2004).
Pl. 40, figs.7a-b	*Berthellina* sp. 1	SBMNH 210425 (empty shell); Berkeley B-6100, B-6120 (empty shells); KLK 200256 (voucher), 200260. Remarks: Collected in 1994 and 2005 as empty shells.
Pl. 40, figs.8a-b	*Berthellina* sp. 2	KLK 210373 (voucher), 200253, 200206. Remarks: Collected as empty shells in 1998 and 2005. The protoconch is smaller than in *Berthellina* sp. 1.
---	*Pleurobranchus areolatus* Mörch, 1863	CASIZ 115684 (leg. K.L. Kaiser). Remarks: A circumtropical species, specimens collected in both 1994 and 1998. Images taken by other expedition members cannot be located.
UMBRACULIDAE		
Pl. 41, figs.1a-b, 2	*Tylodina fungina* Gabb, 1865	KLK 210041 (voucher). Remarks: A tropical eastern Pacific species collected in 2005 and 2007 as empty shells.
PLAKOBRANCHIDAE		
Pl. 42, fig.5	*Elysia flava* Verrill, 1901	CASIZ 115685, 88800 (leg. K.L. Kaiser); LACM 174195 (leg. A. Hermosillo). Remarks: A new distribution record for this species in the tropical eastern Pacific and collected in 1994, 1998 and 2007. Previously reported from Hawaii (Debelius, 1996); Indo-Pacific (pers. comm., T. Gosliner, 2007); Mediterranean (web site, 2007).
Pl. 42, fig.6	*Elysia* sp. 1	CASIZ 115690 (leg. K.L. Kaiser); CASIZ 98806-98807 (leg. R.J. Van Syoc); LACM 174194 (leg. K.L. Kaiser and A. Hermosillo). Remarks: Collected in 1994 and 2007, this undescribed species is believed to be the same as the specimens figured as *Elysia* sp. 2 in Behrens & Hermosillo (2005), Camacho-García et al. (2005) and Hermosillo et al. (2006).
CHROMODORIDIDAE		

Pl. 42 fig.7	*Hypselodoris ghiselini* Bertsch, 1978	**Debelius, 1996** (color photo); **Gosliner & Johnson, 1999,** CASIZ 115681, 88799 (leg. K.L. Kaiser); LACM 174196 (leg. K.L. Kaiser [KLK 210378] and A. Hermosillo). Remarks: A tropical eastern Pacific species collected in 1994, 1998, 2005 and 2007.
DISCODORIDIDAE		
---	Discodoridídae sp. 1	CASIZ 98778 (leg. R.J. Van Syoc). Remarks: A single specimen collected in 1994, no image.
DENDRODORIDIDAE		
Pl. 42, fig.8	*Dendrodoris albobrunnea* Allen, 1933	**Debelius, 1996** (color photo); CASIZ 115683 (leg. K.L. Kaiser); CASIZ 98779, 98781, 98783-98784, 98798, 98802, 98805, 98808 (leg. R.J. Van Syoc); LACM 174190-174191 (leg. K.L. Kaiser [KLK 210379] and A. Hermosillo). Remarks: An Indo-Pacific species collected in 1994, 1998, 2005 and 2007. There is a Turbellaria species (flatworm) at Clipperton that looks very similar to *Dendrodoris albobrunnea*.
Pl. 42, fig.9	*Dendrodoris nigra* (Stimpson, 1855)	CASIZ 115682 (leg. K.L. Kaiser); LACM 174192 (leg. K.L. Kaiser and A. Hermosillo). Remarks: A circumtropical species collected at Clipperton in 1994, 1998 and 2007. It is here reported for the first time in the tropical eastern Pacific.
FLABELLINIDAE		
Pl. 43, fig.1	*Flabellina* sp. 1	LACM 174193 (leg. A. Hermosillo). Remarks: Collected for the first time in 2007.
FACELINIDAE		
Pl. 43, fig.2	*Facelina* sp. 1	LACM 174197 (leg. J. Bozanic). Remarks: Collected for the first time in 2007.
Pl. 43 fig.3	*Facelina* sp. 2	LACM 174198 (leg. J. Bozanic). Remarks: Collected for the first time in 2007.
AEOLIDIIDAE		
Pl. 43, fig.4	*Anteaeolidiella indica* (Bergh, 1888)	CASIZ 115686, 98801 (leg. K.L. Kaiser); CASIZ 98776, 98780 (leg. R.J. Van Syoc). Remarks: A circumtropical species collected in 1994, 1998 and photographed in 2007. Genus changed from *Aeolidiella* by Behrens (2004).
EMBLETONIIDAE		
---	*Embletonia gracilis* Risbec, 1928	LACM 174199 (leg. A. Hermosillo). Remarks: A circumtropical species seen for the first time in 2007. No image of the living animal. Known from the TEP, Indo-Pacific and South Africa (Hermosillo et al., 2006).
TERGIPEDIDAE		
---	*Phestilla lugubris* (Bergh, 1870)	CASIZ 115687 (leg. K.L. Kaiser); LACM 174200 (leg. K.L. Kaiser [KLK 210370 (voucher)]). Remarks: A circumtropical species collected in 1994, 1998 and 2005. No specimens were collected in 2007 and no images of a living animal are available from the previous expeditions.
---	Opisthobranchia sp.1	CASIZ 115691 (leg. K.L. Kaiser). Remarks: A single specimen collected but not imaged in 1994.
---	Opisthobranchia sp.2	CASIZ 115692 (leg. K.L. Kaiser & D.R. Robertson). Remarks: A single specimen collected but not imaged in 1994.

TERRESTRIAL GASTROPODS		
PULMONATA		
SUCCINEIDAE		
Pl. 41, fig.3	*Succinea atollica* Hertlein & Allison, 1968	As *Succinea* sp. in Sachet (1962c) (abundant in 1958, det. E.C. Allison); **Hertlein & Allison, 1968** (UCMP, TC holotype 37132, live, line drawing, paratypes 37133-37135, type locality, endemic); LACM 106665 (empty shells); CASIZ 63798, 16799. Remarks: No specimens have been reported as living or as empty shells since 1958.
SUBULINIDAE		
Pl. 41, fig.4	*Opeas oparanum* (Pfeiffer, 1846)	**Bartsch & Rehder, 1939**: Hertlein & Emerson, 1953; **Sachet, 1962c** (abundant); **Hertlein & Allison, 1966** (live, common); Hertlein & Allison, 1968 (UCMP, TC hypotype 37136, live, line drawing); LACM 58-7 (empty shells); as *Lamellaxis* in CASIZ 80205, 16799 (40 specimens). Remarks: No specimens have been seen or reported as living or as empty shells since 1958.
INCERTAE SEDIS		
Pl.41, figs.5a-c	Gen. sp. 1	KLK 201212 (voucher, empty shell). Remarks: A single empty shell was found in 1994. Possibly a teratological larval shell of a brooding snail (A. Warén, 2007). Other possible identifications: cf. *Pseudomalaxis* sp. or cf. *Gleba* species.
POLYPLACOPHORA		
ISCHNOCHITONIDAE		
Pl. 43, figs.7,8	*Ischnochiton victoria* Ferreira, 1987	As "two small chitons" in **Hertlein & Emerson (1957)** (p.7. "Durham, who identified the species of corals, mentioned the presence in them of two small chitons"). **Sachet (1962c)** (?live, single specimen, from 1958); **Hertlein & Allison, 1966** (live); CASIZ 12810 (single specimen); SBMNH 210436, 358702 (live, wet collection, *fide* R. Clark, 02/1997); MNHN; KLK 210024, 210038 (voucher). Remarks: Collected in 1994, 1998, 2005 and 2007. Live specimens were found and preserved in SBMNH and KLK wet collections. Endemic to Isla del Coco, Costa Rica, in Ferreira (1987). This relatively common inter-island endemic is known only from Isla del Coco and Clipperton.
CEPHALOPODA		
OCTOPODIDAE		
---	*Octopus* spp.	Remarks: SBMNH "holdings contain approximately three to six species, whose identity can not be further ascertained, because a critical review of the region's [Clipperton] cephalopod fauna is wanting" (pers. comm., F.G. Hochberg, 2007). Live specimens were collected and preserved during the 1994, 1998 and 2005 Expeditions.

APPENDIX 2: AN ANNOTATED CHECKLIST OF REJECTED SPECIES PREVIOUSLY RECORDED FROM ÎLE CLIPPERTON

A total of 42 taxa have been previously rejected or are newly rejected records herein.
(11 BIVALVIA, 31 GASTROPODA)

List of Species	Literature Sources/Remarks
BIVALVIA	
ARCIDAE	
Acar divaricata (Sowerby, 1833)	As *Acar* cf. *A. laysana* Dall, Bartsch & Rehder, 1938, in **Hertlein & Allison (1966)** (single live specimen in coral niche, 5 mm), Emerson (1978); as *Barbatia hawaiensis* Dall, Bartsch & Rehder, 1938, in Bernard (1983); Bernard et al., 1991; Emerson, 1994. Remarks: Kay (1979) synonymized *laysana*. Delete record, believed to be a specimen of *Barbatia* sp. 1, herein.
Barbatia (*Acar*) sp.	As ?*Acar* sp. in **Bartsch & Rehder (1939)** (juv.); Hertlein & Emerson, 1953; Sachet, 1962c; Emerson, 1994. Remarks: Delete record, believed to be a specimen of *Barbatia* sp. 1 herein.
Barbatia (*Cucullaearca*) *reeveana* (d'Orbigny) form *velataformis* Sheldon & Maury, 1922	Hertlein & Allison, 1966 (two worn valves, beach deposits). Remarks: Synonymized in Keen (1971).
MYTILIDAE	
Lithophaga (*Myoforceps*) *aristata* (Dillwyn, 1817)	Coan, Valentich Scott & Bernard, 2000. Remarks: No voucher specimens, personal communication E.V. Coan, 2002.
PECTINIDAE	
Delectopecten zacae (Hertlein, 1935)	Hertlein & Emerson, 1953 (UCMP hypotypes 33347 (valve) - 33348, live, dredged 110-150 fm, photos); Sachet, 1962c; Salvat & Ehrhardt, 1970; Keen, 1971; as *Cyclopecten* in Bernard et al. (1991), Emerson (1994). Remarks: Clipperton specimens are *D. vitreus* (Gmelin) in Grau (1959). Rejected record.
SPONDYLIDAE	
Spondylus limbatus G.B. Sowerby II, 1847	As *Spondylus calcifer* (Carpenter, 1847) and also a rejected record in Salvat & Ehrhardt (1970: 223). Remarks: Species changed by Lamprell, Stanisic & Clarkson (2001).
Spondylus princeps Broderip, 1833, *non* Schreibers, 1793	Perrin, 1977 (beach worn). Remarks: Probable misidentification of *S. linguaefelis*, the record is considered dubious. Rejected record.
Spondylus sparsispinosus Dall, Bartsch & Rehder, 1938	Rejected record in Salvat & Ehrhardt (1970: 223).
Spondylus tenebrosus Reeve, 1856	As *S. hawaiensis* Dall, Bartsch & Rehder, 1938, in Salvat & Ehrhardt (1970) (7 single valves, very eroded), Emerson (1978); Bernard, 1983; Emerson, 1994. Remarks: Probable misidentification of *S. linguaefelis* by Salvat & Ehrhardt (1970), the record is considered dubious. Rejected record.
CHAMIDAE	
Chama (*Chama*) *buddiana* C.B. Adams, 1852	As "closely resembles" *C. rubropicta* "from Clipperton" in Keen (1958); *C. rubropicta* is synonymized with *buddiana* in Keen (1971), Bernard, 1976, 1983; Emerson, 1994; LACM 58-7 (worn, juvenile valves, questionable id.). Remarks: It may be

Chama (*Chama*) *buddiana* C.B. Adams, 1852 (continued)	that Keen (1971) started a chain of errors by synonymizing *rubropicta* with *buddiana*. In Bernard (1976) he reports that *buddiana* is "reported from Clipperton" and 1983 he listed *buddiana* as occurring there. Bernard, et al. (1991) did not list *buddiana*. Abbott & Dance (1998) synonymized *rubropicta* with *buddiana*. The author herein reinstates *Chama rubropicta* Bartsch & Rehder, 1939.
Chama (*Chama*) *squamuligera* Pilsbry & Lowe, 1932	As *C. rubropicta* Bartsch & Rehder, n.sp. in **Bartsch & Rehder (1939)** (holotype 472553, USNM, photo); as *C. squamuligera rubropicta* in **Hertlein & Emerson (1953)**, Sachet (1962c), **Hertlein & Allison (1966)** (live), **Salvat & Ehrhardt (1970)**; as *rubropicta* in Keen (1958); Bernard, 1976; *C. rubropicta* synonymized in Bernard (1983); Bernard et al., 1991; Emerson, 1994. Remarks: The author believes that the records of *C. squamuligera* are actually *C. rubropicta*.
GASTROPODA	
ANABATHRIDAE	
Amphithalamus (*Amphithalamus*) *inclusus* Carpenter, 1864	As *A. trosti* Strong & Hertlein, 1939, in Hertlein & Allison (1968) (UCMP, ITC hypotype 37122, live single specimen, line drawing), Salvat & Ehrhardt (1970), Emerson (1994). Remarks: Ponder (1983) synonymized *trosti* and *inclusus*. Figure 2 in Hertlein & Allison (1968: 3) compares with *Elachisina* sp. 1 herein, therefore the record is considered a mistaken identification and therefore a rejected record.
CERITHIIDAE	
Cerithium nesioticum Pilsbry & Vanatta, 1906	**Hertlein & Allison, 1966** (beach deposits, empty shells in tide pools, common); Salvat & Ehrhardt, 1970; Keen, 1971; Emerson, 1978, 1991, 1994. Remarks: Record is most likely the new species *Cerithium* sp. 1 in Appendix 1. Rejected record.
CYPRAEIDAE	
Talostolida rashleighana (Melvill, 1888)	As *Cypraea* in Keen, 1958: 327; as *Bistolida* (*Blasicrura*) *rashleighana rashleighana* in Cate (1969) (AMNH 2045952, empty shells, photo); as *Cypraea* in Perrin (1977) (empty shells, worn), Emerson (1978, 1991); Remarks: Specimens in Cate (1969) are most likely sub-adult specimens of *Blasicrura alisonae* per Groves (1992). As *Blasicrura*, rejected record in Emerson & Chaney (1995).
Talostolida teres (Gmelin, 1791)	As *Cypraea* in **Hertlein (1937)**, **Hertlein & Emerson (1953)** (CAS, MPTC hypotype 9881-2=081109; 081110, photo), Hertlein & Emerson (1957) (empty shells), Keen (1958: 327), **Hertlein & Allison (1960a)** (fresh beach deposits), Sachet (1962c), **Salvat & Ehrhardt (1970)**, Emerson (1967, 1978, 1991[=?*alisonae*], 1994 [=?*alisonae*]); as *Bistolida teres teres* in Cate (1969) (live, photo), as *Cypraea* (*Talostolida*) *t. teres* in Keen (1971); as *Cypraea* in Kay (1979), Cantera (1991); as *Blasicrura* in Groves (1992) (AMNH 80415, 204595, 204595a); tropical eastern Pacific record of *B. teres* questionable in Emerson & Chaney (1995). Remarks: The author believes that all previous records are most likely *Talostolida pellucens* (Melvill). Rejected record.
Luria isabella (Linnaeus, 1758)	As *Cypraea* in Hertlein (1937), Hertlein & Emerson (1953) (CAS, PTC hypotype 9879, photo), Keen (1958: 327); rejected record in Hertlein & Allison (1960a) "Recorded from Clipperton

Luria isabella (Linnaeus, 1758) (continued)	Island by Hertlein & Emerson (1953). Identified as *C. isabella mexicana* by R. Summers (oral communication)." As *Cypraea* in Salvat & Ehrhardt (1970), Burgess (1970). Remarks: Not discussed in Emerson & Chaney (1995). Rejected record as no specimens have been verified.
Mauritia arabicula (Lamarck, 1811)	As *Cypraea* in Emerson (1995). Remarks: Most likely a misprint. Rejected record.
RANELLIDAE	
Cymatium (*Monoplex*) *vestitum* (Hinds, 1844)	**Hertlein, 1937** ("This species is very close to the Indo-Pacific *C. pileare*."); Hertlein & Emerson, 1953 (CAS, PTC hypotype 9883, photo); Hertlein & Strong, 1955; **Hertlein & Allison, 1960b** (fresh beach deposits); Sachet, 1962c; **Salvat & Ehrhardt, 1970** (6 beach deposits); CAS Stanford Univ. Coll. 48899; SIO-BI 1502 (empty shell), (leg. J. Cousteau & S. Luke, 1980); Emerson, 1994. Remarks: Synonymized with *C. pileare* (Linnaeus) by Cernohorsky (1976). With the help of George Metz (CAS), it was determined that all of the CAS specimens with the name of *Cymatium vestitum* collected at Clipperton, are actually *Cymatium macrodon*. Emerson must have rethought his position on *C. vestitum* as it was not considered to be at Clipperton in Emerson & Old (1963). This species is herein rejected and is considered to be a chain of misidentifications of *Cymatium macrodon* (Valenciennes, 1832).
Cymatium (*Monoplex*) *pileare* (Röding, 1798)	Emerson & Old, 1963; Emerson, 1978, 1989. Remarks: *C. pileare* of authors, *non* Linnaeus, 1758, is a synonym of *C. macrodon* in Henning & Hemmen (1993). Rejected record.
BURSIDAE	
Bursa granularis affinis (Broderip & Sowerby, 1833)	Hertlein & Allison, 1960b (live), Sachet (1962c). Remarks: This record (CASIZ 48895) identified by E. Allison in 1958, is *B. granularis* (*fide* K.L. Kaiser). Rejected record.
Bursa cruentata (Sowerby, 1841)	Hertlein & Allison, 1960b (live); Sachet, 1962c; Salvat & Ehrhardt, 1970. Remarks: Most likely misidentified specimens of *B. asperrima* in Hertlein & Allison (1960b). Rejected record.
MURICIDAE	
Favartia (*Murexiella*) cf. *vittata* (Broderip, 1833)	As *Ocenebra* cf. *vittata* (Broderip, 1833) in Hertlein & Allison (1966) (juvenile specimen, dredged 92m). Remarks: The record was never repeated on species lists after 1966. Rejected record.
Drupa (*Drupa*) *morum morum* Röding, 1798	As *D. morum* Röding in Hertlein & Allison (1960b) (single beach-worn specimen), Sachet (1962c), Salvat & Ehrhardt (1970), Emerson & Cernohorsky, 1973; Emerson (1978, 1991, 1994). Remarks: Kay (1979) erroneously cites Hertlein (1937) as listing *D. morum* at Clipperton. Rejected record.
Drupa morus Lamarck, 1822	Hertlein, 1937 (CAS, PTC plesiotype 7062, footnote, photo [fig.16 is *Morula uva*]); as *D. morum* Röding, 1798, in Kay (1979) citing Hertlein (1937); as *Ricinula morus* [see: Pilsbry and Bryan, 1918 (The Nautilus 31(3): 102, figure 11 is *Morula uva*)]; as *Sistrum morus* Lamarck in SDNHM 50054 (inside label as: "Clipperton Island?, ?adventurous [sic, ?adventitious], 2 live, Dr. Fred Baker Coll." Remarks: SDNHM specimens are actually *Morula granulata* (Duclos, 1832) with questionable locality, *fide* K.L. Kaiser. Rejected record.

Morula (*Morula*) *aspera* (Lamarck, 1816)	Keen, 1958: 376; as *M. uva aspera* in Hertlein & Allison, (1960b). Sachet, 1962c as cited by Keen (1958); Keen, 1971. Remarks: As a synonym of *M. uva* (Röding) in Radwin & D'Attilio (1972). Rejected record.
Nassa francolina (Bruguière, 1789)	Hertlein & Allison, 1960b (worn beach deposits); Sachet, 1962c; as *Nassarius* in Salvat & Ehrhardt (1970); Emerson, 1978. Remarks: Distribution – Indian Ocean (Maes, 1966, Kay, 1979, Houart, 1996). Author believes unseen specimens to be misidentified records of *Nassa serta* which is found at Clipperton. Rejected record.
Ceratostoma nuttalli Conrad, 1837	As *Purpura* in Hertlein & Emerson (1953) (collected by W.H. Ochsner in 1905-06, "almost certainly ballast"), record repeated by Sachet (1962c), Salvat & Ehrhardt (1970). Remarks: CASIZ 94643; record rejected by Emerson (1994).
Coralliobia cumingii (H. Adams & A. Adams, 1863)	As *Coralliophila* (*Coralliobia*) *cumingii* in Kosuge & Suzuki (1985); *C. robillardi* distribution restricted to Mauritius in Kosuge & Suzuki (1985); *Campulotus cumingii* (H. Adams & A. Adams) as possible synonym for *Reliquiaecava robillardi* (Liénard, 1870) in Emerson (1991). Remarks: Clipperton *Coralliobia* are believed to be *C. robillardi*. Rejected record.
Coralliobia fimbriata (A. Adams, 1854)	Emerson, 1991. Remarks: Species not mentioned in Emerson (1994). Rejected record.
BUCCINIDAE	
Kelletia kelleti (Forbes, 1850)	Rejected record in Salvat & Ehrhardt (1970: 223). Remarks: Unable to obtain original reference.
Cantharus (*Pollia*) *sanguinolentus* (Duclos, 1833)	Hertlein & Allison, 1960b (worn single specimen); Sachet, 1962c; Salvat & Ehrhardt, 1970; Emerson, 1994. Remarks: Until confirmed, rejected record.
Clivipollia costata (Pease, 1860)	As *Peristernia thaanumi* Pilsbry & Bryan, 1918, in Hertlein & Allison (1966) (live), Salvat & Ehrhardt (1970), Emerson (1978); Kay, 1979; Emerson, 1991, 1994. Remarks: Believed to be misidentifications of *Clivipollia fragarius* (Wood). Rejected record.
MELONGENIDAE	
Pugilina lactea (Reeve, 1847)	A single specimen (UCMP 7191) studied by Hertlein & Allison (1966); Salvat & Ehrhardt, 1970. Remarks: Stating confirmation needed in Hertlein & Allison (1966). Rejected record in Emerson (1994).
FASCIOLARIIDAE	
Latirus clippertonensis Hertlein & Allison, 1968	Hertlein & Allison, 1968 (UCMP,TC holotype 37130-37131, 14100-14101, ?live, photo); Salvat & Ehrhardt, 1970. Remarks: Synonymized with *L. socorroensis* Hertlein & Strong, 1951, in Keen (1971).
VOLUTIDAE	
Voluta ancilla (Lightfoot, 1786)	Lowe, 1933: "anomalous occurrence" in Hertlein (1937), Hertlein & Emerson, 1953; Sachet, 1962c. Remarks: Rejected record in Emerson (1994).
Voluta deshayesii Reeve, 1855	Dall, 1911; Lowe, 1933; Hertlein, 1937; Hertlein & Emerson, 1953; Sachet, 1962c. Remarks: Rejected record in Emerson (1994).
HARPIDAE	
Harpa crenata Swainson, 1822	Rejected record in Salvat & Ehrhardt (1970: 223). Remarks: Probable misidentification of *H. gracilis*.

COSTELLARIIDAE	
Vexillum subdivisum (Gmelin, 1791)	SDNHM 42933 (single beach deposit, empty shell). Remarks: Rejected record, "*Vexillum subdivisum* is not known to occur on the Pacific Plate." Emerson (1999).
CONIDAE	
Conus miliaris Hwass, 1792	Dall, 1910. Remarks: Most assuredly referring to *Conus tiaratus*. Rejected record.
TEREBRIDAE	
Terebra maculata (Linnaeus, 1758)	Emerson (1991). Remarks: *T. maculata* was not listed in Emerson (1994). Most likely a misprint in Emerson (1991). Rejected record.
PYRAMIDELLIDAE	
Cyclostrema cingulifera A. Adams, 1850	Hertlein & Allison (1966) (live). Remarks: Specimen(s) were eventually described as a new species, *Pachystremiscus solitarius* in Hertlein & Allison (1968) (line drawing). Rejected record.
CHROMODORIDIDAE	
Glossodoris sedna (Marcus & Marcus, 1967)	Debelius, 1996. Remarks: The color image in Debelius (1996) was taken by Jim Black on the 1994 Clipperton Expedition. The specimen was not collected. Locality record needs to be confirmed.

APPENDIX 3: A DOCUMENTED ZOOGEOGRAPHIC REVIEW OF THE MOLLUSCAN FAUNA OF ÎLE CLIPPERTON

Appendix 3 categorizes the 191 identified Clipperton species into seven groups which define their zoogeographic affinities. The total number of identified taxa in each group is presented as a percentage of the 191 species:

Eastern Pacific Species: 72=37.7%
Indo-Pacific Emigrant Species at Clipperton Known to Occur on the Mainland (Oceanic Islands + Mainland): 23=12.0%
Indo-Pacific Emigrant Species at Clipperton Known to Occur on the Oceanic Islands of the Tropical Eastern Pacific (Oceanic Islands only): 41=21.5% (Grand total for Indo-Pacific: 64=33.5%)
Tropical Eastern Pacific Inter-Island Endemic Species: 17=8.9%
Circumtropical Species that Occur at Clipperton: 31=16.2%
Resident (Endemic) Species: 5=2.6%
Western Atlantic Ocean Species Occurring in the Tropical Eastern Pacific: 2=1.0%

This review includes 43 new distribution records for the tropical eastern Pacific oceanic islands. The geographic entries are shown in bold and include: Islas Revillagigedo (24); Isla del Coco (14); Isla de Malpelo (1); Islas Galápagos (3) and for mainland west America (1).

The following taxa have been listed according to their faunal elements. The citations for geographic locality records following the species are believed to be the first record documented for each locality.

Eastern Pacific Species

Clipperton species representing established Panamic and/or Californian faunal elements that are known to have tropical eastern Pacific oceanic island distributions.

BIVALVIA

Arcidae

- *Arca mutabilis* (Sowerby, 1833): Islas Revillagigedo (Emerson, 1995); Isla del Coco (Bernard et al., 1991); Isla de Malpelo (Birkeland et al., 1975); Islas Galápagos (Rost, 1955).
- *Acar gradata* (Broderip & Sowerby, 1829): **Islas Revillagigedo** (K.L. Kaiser Coll. 202819-202822); Isla del Coco (Bernard et al., 1991); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Abbott, 1974).
- *Barbatia reeveana* (d'Orbigny, 1846): Rocas Alijos (McLean & Coan, 1996); **Islas Revillagigedo** (K.L. Kaiser Coll. 210420); Isla del Coco (Bernard et al., 1991); Isla de Malpelo (Birkeland et al., 1975); Islas Galápagos (Bernard, 1983).

Mytilidae

- *Lithophaga plumula* (Hanley, 1843): Islas Revillagigedo (Holguín Quiñones, 1994); Isla del Coco (Bernard et al., 1991); Isla de Malpelo (Birkeland et al., 1975); Islas Galápagos (Soot-Ryen, 1955).
- *Lithophaga calyculata* (Carpenter, 1857): Islas Revillagigedo (Strong & Hanna, 1930); Isla del Coco (Bernard et al., 1991); Islas Galápagos (Soot-Ryen, 1955).
- *Septifer zeteki* Hertlein & Strong, 1946: Islas Revillagigedo (Soot-Ryen, 1955); Isla del Coco (Bernard et al., 1991); Isla de Malpelo (Birkeland et al., 1975); Islas Galápagos (Bernard, 1983).

Pteriidae

- *Pinctada mazatlanica* (Hanley, 1856): **Islas Revillagigedo** (K.L. Kaiser Coll. 202839); Isla del Coco (Bernard et al., 1991); Isla de Malpelo (von Prahl, 1990); Islas Galápagos (Hertlein, 1937).

Isognomonidae

- *Isognomon janus* Carpenter, 1857: Islas Revillagigedo (Bartsch & Rehder, 1939); Isla del Coco (Emerson, 1994); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Bernard et al., 1991).
- *Isognomon recognitus* (Mabille, 1895): Islas Revillagigedo (Strong & Hanna, 1930); Isla del Coco (Biolley, 1907); Isla de Malpelo (Birkeland et al., 1975); Islas Galápagos (Bernard, 1983).

Pinnidae

- *Pinna rugosa* Sowerby, 1835: Islas Galápagos (Angermeyer, 1971).

Anomiidae

- *Anomia peruviana* d'Orbigny, 1846: Islas Revillagigedo, Isla del Coco (Bernard et al., 1991); Islas Galápagos (Soot-Ryen, 1932).

Lucinidae

- *Codakia distinguenda* (Tryon, 1872): Rocas Alijos (McLean & Coan, 1996); Islas Revillagigedo (Strong & Hanna, 1930); Isla del Coco (Bernard et al., 1991); Islas Galápagos (Taviani, 1979).
- *Ctena clarionensis* Hertlein & Strong, 1946: Rocas Alijos (McLean & Coan, 1996); Islas Revillagigedo, type locality (Hertlein & Strong, 1946); Isla del Coco (Emerson, 1995).

Condylocardiidae

- *Condylocardia digueti* Lamy, 1916: Rocas Alijos (McLean & Coan, 1996); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Bernard, et al., 1991).

Semelidae

- *Semele jamesi* Coan, 1988: Rocas Alijos (McLean & Coan, 1996); Isla del Coco (Coan, 1988); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Kaiser, 1997).

Gastrochaenidae

- *Gastrochaena ovata* Sowerby, 1834: Islas Revillagigedo (Strong & Hanna, 1930); Isla del Coco (J. Hertz & Kaiser, 1998b); Islas Galápagos, 1°S-28°N, Atlantic (Bernard, 1983).

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Scissurellidae

- *Sinezona rimuloides* (Carpenter, 1856): **Islas Revillagigedo** (K.L. Kaiser Coll. 202422); Isla del Coco, Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Shasky, 1989a).
- *Sinezona* sp. 1 (Geiger, unpublished data): Isla del Coco (K.L. Kaiser Coll.).
- *Scissurella kaiserae* Geiger, 2006: Islas Revillagigedo, Isla del Coco, Isla de Malpelo (Geiger, 2006); **Islas Galápagos,** as *Scissurella* (*Scissurella*) sp. in Kaiser (1997); Panamic Province and offshore islands from 4°N to 28.5°N (Geiger, 2006).

Turbinidae

- *Homalopoma clippertonense* (Hertlein & Emerson, 1953): Islas Revillagigedo (Keen, 1971).

Littorinidae

- *Littoraria pintado pullata* (Carpenter, 1864): Islas Revillagigedo (González-Nakagawa & Nava, 1986); Isla del Coco (Reid, 1999); Isla de Malpelo (Reid & Kaiser, 2001).

- *Nodilittorina modesta* (Philippi, 1846): Islas Revillagigedo (Hertlein & Strong, 1930); Isla del Coco (Bakus, 1975); Islas Galápagos (Finet, 1985).

Rissoidae
- *Rissoina stricta* Menke, 1850: Islas Revillagigedo (Strong & Hanna, 1930); Isla del Coco (Reid, 1999); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Finet, 1985).

Barleeidae
- *Barleeia* cf. *bifasciata* (Carpenter, 1857): Isla del Coco, Isla de Malpelo (Kaiser & Bryce, 2001).

Caecidae
- *Fartulum* cf. *glabriforme* (Carpenter, 1857): Isla del Coco, Isla de Malpelo (Kaiser & Bryce, 2001).

Vermetidae
- *Eualetes* cf. *tulipa* (Chenu, 1843).

Cerithiidae
- *Cerithium maculosum* Kiener, 1841: Islas Revillagigedo (Strong & Hanna, 1930); Isla del Coco (Montoya, 1983); Islas Galápagos, as *C. adustum* [syn.] in Finet (1994).

Planaxidae
- *Fossarus* cf. *angulatus* Carpenter, 1857: **Isla del Coco** (K.L. Kaiser Coll. 210421-210422); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Shasky, 1989a).

Epitoniidae
- *Epitonium emydonesus* Dall, 1917: **Islas Revillagigedo** (K.L. Kaiser Coll. 201539); Isla de Malpelo, as *E. acapulcanum* Dall, 1917, in Kaiser & Bryce (2001); Islas Galápagos (Keen, 1971).

Hipponicidae
- *Hipponix antiquatus panamensis* C.B. Adams, 1852: Islas Revillagigedo (Holguín-Quiñones, Mille-Pagaza & Pérez-Chi, 1992); Isla del Coco (Kaiser & Bryce, 2001); Isla de Malpelo (Birkeland et al., 1975); Islas Galápagos (Wimmer, 1880; Keen & Coan, 1975).
- *Pilosabia pilosa* (Deshayes, 1832): Islas Revillagigedo (Strong & Hanna, 1930); Isla del Coco (Montoya, 1983); Islas Galápagos (Hertlein, 1937); tropical Atlantic and Hawaiian Islands (Kay, 1979).

Triviidae
- *Trivia cherobia* (Cate, 1979).

Cypraeidae
- *Erosaria albuginosa* (Gray, 1825): Rocas Alijos (McLean & Coan, 1996); Islas Revillagigedo (Strong & Hanna, 1930); Isla del Coco (Burgess, 1985); Isla de Malpelo (Birkeland et al., 1975); Islas Galápagos (Wimmer, 1880).
- *Luria isabellamexicana* (Stearns, 1893): Islas Revillagigedo (Strong & Hanna, 1930); Isla del Coco (Montoya, 1983); Isla de Malpelo (Birkeland et al., 1975); Islas Galápagos (Hoffstetter, 1954).

Tonnidae
- *Malea ringens* (Swainson, 1822): Islas Revillagigedo (Emerson, 1994); Isla del Coco, Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Wimmer, 1880).

Cassidae
- *Cypraecassis coarctata* Sowerby, 1825: Islas Revillagigedo (Bautista-Romero et al., 1994); Islas Galápagos (Finet, 1985).
- *Cypraecassis tenuis* (Wood, 1828): Islas Revillagigedo (Strong & Hanna, 1930); Isla del Coco (Shasky, 1989e); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Reeve, 1848).

Cerithiopsidae
- *Cerithiopsis* cf. *eiseni* Strong & Hertlein, 1939: Islas Galápagos (Hertlein & Strong, 1955).
- *Cerithiopsis oaxacana* Hertlein & Strong, 1951.

Triphoridae
- *Triphora dalli* Bartsch, 1907: **Islas Revillagigedo** (K.L. Kaiser Coll. 202615-202619); Isla del Coco, Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Finet, 1985).

Muricidae
- *Hexaplex princeps* (Broderip, 1833): Islas Revillagigedo, Isla del Coco (Kaiser, 2001); Isla de Malpelo (Birkeland et al., 1975); Islas Galápagos (Stearns, 1893).
- *Attiliosa nodulosa* (A. Adams, 1855): **Isla del Coco** (K.L. Kaiser Coll.).
- *Favartia exigua* (Broderip, 1833): **Islas Revillagigedo** (K.L. Kaiser Coll. 202621-202624).
- *Pascula rufonotata* (Carpenter, 1864): Rocas Alijos (McLean & Coan, 1996); Islas Revillagigedo, Isla del Coco, Isla de Malpelo (Kaiser, 2001); Islas Galápagos (Radwin & D'Attilio, 1972).
- *Phyllocoma scalariformis* (Broderip, 1833): Isla del Coco (Shasky, 1989e); Islas Galápagos (Keen, 1971).
- *Mancinella speciosa* (Valenciennes, 1832): Rocas Alijos (Kaiser, 2006); Islas Revillagigedo (Holquín-Quiñones, Mille-Pagaza & Pérez-Chi, 1992); Isla del Coco (Montoya, 1983); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Hertlein & Strong, 1955).
- *Plicopurpura pansa* (Gould, 1853): Islas Revillagigedo (Strong & Hanna, 1930); Isla del

Coco (Bakus, 1975); Isla de Malpelo (Birkeland et al., 1975); Islas Galápagos (Carpenter, 1857).

- *Stramonita biserialis* (Blainville, 1832): Islas Revillagigedo (Mille-Pagaza, Pérez-Chi & Holquín-Quiñones, 1994); Isla del Coco (Montoya, 1983); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Keen, 1971).
- *Tribulus planospira* (Lamarck, 1822): Rocas Alijos (McLean & Coan, 1996); Islas Revillagigedo (Strong & Hanna, 1930); Isla del Coco (Emerson & Old, 1964); Isla de Malpelo (Birkeland et al., 1975); Islas Galápagos (Reeve, 1846).
- *Coralliophila macleani* Shasky, 1970: Islas Revillagigedo (Reyes-Bonilla, 1999); Isla del Coco, Isla de Malpelo (Kaiser, 2001).
- *Coralliophila parva* (E.A. Smith, 1877): Islas Revillagigedo (Emerson, 1995); Isla del Coco, Isla de Malpelo (Kaiser, 2001); Islas Galápagos (Bartsch & Rehder, 1939).

Buccinidae

- *Colubraria* cf. *lucasensis* Strong & Hertlein, 1937: Isla del Coco (J. Hertz & Kaiser, 1998a); Islas Galápagos (Hertlein, 1937).

Columbellidae

- *Sincola gibberula* (Sowerby, 1832): Islas Revillagigedo (Jung, 1989).

Nassariidae

- *Nassarius catallus* (Dall, 1908): Islas Revillagigedo (Emerson, 1995); **Isla del Coco** (K.L. Kaiser Coll.); Islas Galápagos (Keen, 1971).

Fasciolariidae

- *Pleuroploca princeps* (Sowerby, 1825): **Isla del Coco** (K.L. Kaiser Coll.); Isla de Malpelo (Birkeland et al., 1975); Islas Galápagos (Stearns, 1893).

Cysticidae

- *Granulina* cf. *margaritula* (Carpenter, 1857): Rocas Alijos (McLean & Coan, 1996); Islas Revillagigedo (Strong & Hanna, 1930); Islas Galápagos (Hertlein & Strong, 1955).

Mitridae

- *Mitra effusa* Broderip, 1836: **Islas Revillagigedo** (K.L. Kaiser Coll.); Isla del Coco (Cernohorsky, 1976); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Keen, 1971).
- *Mitra rupicola* Reeve, 1844.

Conidae

- *Conus brunneus* Wood, 1828: Islas Revillagigedo (Strong & Hanna, 1930); Isla del Coco (Biolley, 1907); Islas Galápagos (Stearns, 1893).
- *Conus diadema* Sowerby, 1834: Islas Revillagigedo (Hanna, 1963); Isla del Coco (Montoya, 1983); Isla de Malpelo (Birkeland et al., 1975); Islas Galápagos (Hanna, 1963).
- *Conus tiaratus* Sowerby, 1833: Islas Revillagigedo (Villalobos, 1960); Isla del Coco (Montoya, 1983); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Keen, 1971).
- *Conus purpurascens* Sowerby, 1833: Islas Revillagigedo (Strong & Hanna, 1930); Isla del Coco (Montoya, 1983); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Finet, 1985).
- *Conus gradatus* Wood, 1828: Isla del Coco (Montoya, 1983).
- *Conus nux* Broderip, 1833: Rocas Alijos (Kaiser, 2006); Islas Revillagigedo (Strong & Hanna, 1930); Isla del Coco, Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Stearns, 1893).

Turridae

- *Clathurella rigida* (Hinds, 1843): Islas Revillagigedo, Isla del Coco (Shasky, 1996); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Shasky, 1989a).
- *Kurtziella plumbea* (Hinds, 1843): Isla del Coco (Shasky, 1996a).

Omalogyridae

- *Omalogyra* sp. 1: **Islas Revillagigedo** (K.L. Kaiser Coll. 202760); Isla del Coco (Shasky, 1989b); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Shasky, 1989b).

Architectonicidae

- *Heliacus mazatlanicus* Pilsbry & Lowe, 1932: Isla del Coco (SBMNH); Islas Galápagos (Robertson *in* Keen, 1971).

Pyramidellidae

- *Iselica kochi* Strong & Hertlein, 1939.

Pleurobranchidae

- *Berthellina ilisima* (Marcus & Marcus, 1967): Isla del Coco (Mulliner, 1993); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Bertsch, 1970).

Umbraculidae

- *Tylodina fungina* Gabb, 1865: Rocas Alijos (McLean & Coan, 1996); Islas Revillagigedo (Emerson, 1995); Isla del Coco (Mulliner, 1993); Isla de Malpelo (Birkeland et al., 1975); Islas Galápagos (Keen, 1971).

Chromodorididae

- *Hypselodoris ghiselini* Bertsch, 1978: (Gosliner & Johnson, 1999).

Indo-Pacific Emigrant Species Known to Occur on the Mainland

Indo-Pacific taxa that are known to occur at one or more oceanic islands of the tropical eastern Pacific as well as having emigrated to the west American mainland.

BIVALVIA

Mytilidae

- *Leiosolenus laevigata* (Quoy & Gaimard, 1835): Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Kleeman, 1980); Panamá to Islas Galápagos, as *Lithophaga hancocki* in Keen (1971).

Gryphaeidae

- *Hyotissa hyotis* (Linnaeus, 1758): Islas Revillagigedo (Holguín Quiñones, 1994); Isla del Coco (Kaiser & Bryce, 2001); Isla de Malpelo (Birkland et al., 1975); Panamic Province (Harry, 1985).

Spondylidae

- *Spondylus linguaefelis* Sowerby, 1847: Islas Revillagigedo (Skoglund, 2000); Isla del Coco (Bernard et al., 1991); Isla de Malpelo, Islas Galápagos, Golfo de Chiriquí (Panamá) (Skoglund, 2000).

GASTROPODA

Phenacolepadidae

- *Plesiothyreus* cf. *osculans* (C.B. Adams, 1852): **Islas Revillagigedo** (K.L. Kaiser Coll. 202474); Isla del Coco, Isla de Malpelo (Kaiser & Bryce, 2001); Golfo de California to Panamá (Keen, 1971).

Eulimidae

- *Melanella dufresnei* Bowdich, 1822: **Isla Montuosa, Golfo de Chiriquí, Panamá** (K.L. Kaiser Coll.).

Hipponicidae

- *Antisabia foliacea* (Quoy & Gaimard, 1835): west coast of the Americas (Kay, 1979).

Naticidae

- *Polinices simiae* (Deshayes, *in* Deshayes & Edwards, 1838): Isla del Coco (Hollmann, 1996); **Islas Galápagos** (K.L. Kaiser Coll. 201986); Golfo de Chiriquí, Panamá (Chaney, 1996).

Cypraeidae

- *Monetaria caputserpentis caputserpentis* (Linnaeus, 1758): Isla del Coco (Shasky, 1983c); Islas Galápagos (Kay, 1991).
- *Monetaria moneta* (Linnaeus, 1758): Isla del Coco, Islas Galápagos (Hertlein, 1932); Golfo de Montijo, Panamá (Emerson, 1993).
- *Talparia talpa* (Linnaeus, 1758): Isla del Coco (Kaiser & Bryce, 2001); Panamá (Emerson, 1983).
- *Talostolida pellucens* (Melvill, 1888), as *Cypraea alisonae*: Isla del Coco (Shasky, 1983a,b); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Burgess, 1985); Panamá (Robertson, 1976).

Ranellidae

- *Cymatium macrodon* (Valenciennes, 1832): Islas Revillagigedo, as *pileare* in Emerson & Old (1963); Isla del Coco (Emerson & Old, 1964); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Wimmer, 1880); mainland Central America, as *pileare* in Emerson & Old (1963).

Bursidae

- *Bursa granularis* (Röding, 1798): Islas Revillagigedo (Emerson, 1991); Isla del Coco (Shasky, 1983c); Isla de Malpelo (Kaiser & Bryce, 2001); Bahía Chamela, Jalisco, México (Emerson, 1991).

Muricidae

- *Coralliophila neritoides* (Lamarck, 1816):Islas Revillagigedo (Strong & Hanna, 1930); Isla del Coco (Shasky, 1983c); Isla de Malpelo (Kaiser, 2001); Islas Galápagos (Keen, 1971); Isla Montuosa, Golfo de Chiriquí, Panamá (Kaiser, 2002).
- *Rhizochilus antipathum* Steenstrup, 1850: Isla del Coco (Kaiser & C. Hertz, 2001); Cabo Haro, Sonora, México (Poorman, 1981).
- *Quoyula madreporarum* (Sowerby, 1834): Islas Revillagigedo (Emerson, 1983); Isla del Coco (Kaiser, 2001); Isla de Malpelo (Birkeland et al., 1975); Islas Galápagos (Wimmer, 1880); México to Panamá (Robertson, 1976).
- *Quoyula monodonta* (Blainville, 1832): **Islas Revillagigedo** (K.L. Kaiser Coll. 202654); **Isla del Coco** (K.L. Kaiser Coll.); Isla de Malpelo (von Prahl, 1990); recorded by Tryon from the Indian Ocean, Japan, and central Pacific (Tomlin, 1927).

Conidae

- *Conus chaldaeus* (Röding, 1798): Isla del Coco (Shasky, 1989e); Islas Galápagos (Keen, 1971); mainland Costa Rica (Anders, 1978).
- *Conus ebraeus* Linnaeus, 1758: Isla San Benedicto, **Islas Revillagigedo** (K.L. Kaiser Coll. 202725); Isla del Coco (Shasky, 1989e); Islas Galápagos

(Hertlein, 1937); Costa Rica (Keen, 1958).
- *Conus tessulatus* Born, 1778: Islas Revillagigedo, as *C. edaphus* in Dall (1910); Isla del Coco (Shasky, 1989d); Islas Galápagos (Shasky, 1989a); México (Robertson, 1976).

Turridae
- *Microdaphne trichodes* (Dall, 1919): Isla del Coco (Shasky, 1996a); Islas Galápagos (Hertlein & Strong, 1955); Golfo de California, México to Isla Gorgona, Colombia (McLean *in* Keen, 1971).

Pyramidellidae
- *Herviera gliriella* (Melvill & Standen, 1896): Isla del Coco (Shasky, 1987b); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Shasky, 1989a); Golfo de California and Jalisco, México (Shasky, 1987b).

Aplysiidae
- *Phestilla lugubris* (Bergh, 1870): **Islas Revillagigedo** (pers. comm., A. Hermosillo, 2005); Isla de Malpelo, as *P. panamica* in Kaiser & Bryce (2001); Islas Galápagos, Baja California (México), Panamá (Gosliner, 1990).

Indo-Pacific Emigrant Species at Clipperton Known to Occur Only On the Oceanic Islands of the Tropical Eastern Pacific

Species that have emigrated from the tropical Indo-Pacific and have established populations as far east as one or more of the oceanic islands of the tropical eastern Pacific (unless otherwise noted they occur only at Clipperton). These taxa are not known from the west American mainland.

BIVALVIA

Pinnidae
- *Streptopinna saccata* (Linnaeus, 1758): Isla del Coco (Shasky, 1987b).

Gryphaeidae
- *Parahyotissa quercina* (Sowerby, 1871): Isla de Malpelo, as Ostreidae sp. 5 in Kaiser & Bryce (2001).

Lucinidae
- *Codakia punctata* (Linnaeus, 1758).

Semelidae
- *Rochefortina sandwichensis* (Smith, 1885).

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Fissurellidae
- *Diodora granifera* (Pease, 1861).

Neritidae
- *Nerita plicata* Linnaeus, 1758.

Littorinidae
- *Littoraria coccinea* (Gmelin, 1791): Isla del Coco (Reid & Kaiser, 2001).
- *Littoraria undulata* (Gray, 1839): Isla del Coco (Reid & Kaiser, 2001).

Vermetidae
- *Petaloconchus* cf. *keenae* Hadfield & Kay, 1972.
- *Dendropoma meroclista* Hadfield & Kay, 1972.
- *Dendropoma* cf. *platypus* (Mörch, 1861).

Cerithiidae
- *Cerithium* cf. *atromarginatum* Dautzenberg & Bouge, 1933.
- *Cerithium echinatum* Lamarck, 1822.

Eulimidae
- *Melanella cumingii* (A. Adams, 1854).
- *Melanella* cf. *exilis* (Pease, 1863).
- *Melanella inflexa* (Pease, 1868).
- *Melanella thaanumi* (Pilsbry, 1917).

Cypraeidae
- *Erosaria helvola helvola* (Linnaeus, 1758).
- *Lyncina schilderorum* (Iredale, 1939).
- *Lyncina vitellus* (Linnaeus, 1758).
- *Mauritia depressa* (Gray, 1824).
- *Mauritia maculifera* Schilder, 1932.
- *Mauritia scurra* (Gmelin, 1791).

Bursidae
- *Bursa asperrima* (Dunker, 1862): Islas Galápagos (Emerson, 1991).

Muricidae
- *Pterynotus tripterus* (Born, 1778).
- *Maculotriton serriale* (Deshayes, 1834).
- *Drupa ricinus ricinus* (Linnaeus, 1758): Islas Galápagos (Hertlein, 1937).
- *Morula uva* (Röding, 1798): Isla del Coco (Shasky, 1989e).
- *Nassa serta* (Bruguière, 1789).
- *Latiaxis tosanus* Hirase, 1908.
- *Reliquiaecava robillardi* (Liénard, 1870): Isla del Coco (Shasky, 1989e); Isla de Malpelo (Kaiser, 2001).

Buccinidae
- *Clivipollia fragarius* (Wood, 1828): Isla del Coco (Shasky, 1987a).

Harpidae
- *Harpa gracilis* Broderip & Sowerby I, 1829.

Mitridae
- *Mitra edentula* Swainson, 1823.
- *Mitra ferruginea* Lamarck, 1811: Isla del Coco (Shasky, 1984); Isla de Malpelo (Kaiser & Bryce, 2001).
- *Mitra litterata* Lamarck, 1811.
- *Mitra papalis* (Linnaeus, 1758): Isla del Coco (Shasky, 1989e).

Terebridae
- *Terebra crenulata* (Linnaeus, 1758): Islas Revillagigedo (Bratcher & Burch *in* Keen, 1971); Isla del Coco (Montoya & Kaiser, 1988).

Pleurobranchidae
- *Berthella martensi* (Pilsbry, 1896): **Islas Revillagigedo** (pers. comm., A. Hermosillo, 2007).

Dendrodoridae
- *Dendrodoris albobrunnea* Allen, 1933: Isla de Malpelo (Kaiser & Bryce, 2001).

Subulinidae (Pulmonata)
- *Opeas oparanum* (Pfeiffer, 1846).

Tropical Eastern Pacific Inter-Island Endemic Species

Clipperton species that are known to occur at two or more of the five oceanic island groups within the tropical eastern Pacific and are unknown elements in other geographic regions.

GASTROPODA

Fissurellidae
- *Diodora* cf. *punctifissa* McLean, 1970: Islas Revillagigedo (Emerson, 1995); Isla del Coco, Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos, type locality (McLean, 1970a).

Skeneidae
- *Pachystremiscus solitarius* (Hertlein & Allison, 1968): **Islas Revillagigedo** (K.L. Kaiser Coll. 202448); Isla del Coco, Isla de Malpelo (Kaiser & Bryce, 2001).

Turbinidae
- *Eulithidium diantha* McLean, 1970: Isla del Coco (Shasky, 1989c); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos, type locality (McLean, 1970b).

Barleeidae
- *Lirobarleeia* cf. *nigrescens* (Bartsch & Rehder, 1939): Islas Galápagos, as *Alvania galapagensis* in Bartsch (1911).

Elachisinidae
- *Elachiscina* sp. 1: **Islas Revillagigedo** (K.L. Kaiser Coll. 202503-202504); **Isla del Coco** (K.L. Kaiser Coll.); Isla de Malpelo (Kaiser & Bryce, 2001).

Caecidae
- *Fartulum* sp. 1: **Islas Revillagigedo** = *Fartulum* sp. 2 (K.L. Kaiser Coll. 202510); Isla de Malpelo = *Fartulum* sp. 2 in Kaiser & Bryce (2001).

Cerithiidae
- *Cerithium* sp. 2: **Isla del Coco** (K.L. Kaiser Coll.).

Epitoniidae
- *Epitonium* sp. 3: **Islas Revillagigedo** = *Epitonium* sp. 1 (K.L. Kaiser Coll. 202538); Isla de Malpelo, as *Epitonium* sp. 1 in Kaiser & Bryce (2001).

Muricidae
- Coralliophilinae sp. 1: **Isla del Coco** (K.L. Kaiser Coll.); Isla de Malpelo, as Coralliophilidae sp. 1 in Kaiser & Bryce (2001); **Islas Galápagos** (K.L. Kaiser Coll. 202102 [+]).

Buccinidae
- *Colubraria ochsneri* Hertlein & Allison, 1968: Islas Revillagigedo (Chávez Hernández & Bretado Aguirre, 1990); Isla del Coco (J. Hertz & Kaiser, 1998a); Isla de Malpelo (Birkeland et al., 1975); Islas Galápagos (Finet, 1985).

Fasciolariidae
- *Latirus socorroensis* Hertlein & Strong, 1951: Islas Revillagigedo, type locality (Hertlein & Strong, 1951).

Tofanellidae
- *Graphis* sp. 1: **Isla del Coco** (K.L. Kaiser Coll.); Isla de Malpelo (Kaiser & Bryce, 2001).

Pyramidellidae
- *Iselica* sp. 1: Isla de Malpelo, as *Iselica* sp. 1 (K.L. Kaiser Coll. 201675) in Kaiser & Bryce (2001).
- Odostomiinae sp. 1: Isla de Malpelo, as *Odostomia* sp. 4 (K.L. Kaiser Coll. 201686) in Kaiser & Bryce (2001).

Orbitestellidae
- *Orbitestella* sp. 1: **Islas Revillagigedo** (K.L. Kaiser Coll. 202800); **Isla del Coco** (K.L. Kaiser Coll.); Isla de Malpelo (Kaiser & Bryce, 2001).

Plakobranchidae
- *Elysia* sp. 1: **Islas Revillagigedo** as *Elysia* sp. 2 in Camacho-García et al. (2005).

POLYPLACOPHORA
Ischnochitonidae
- *Ischnochiton victoria* Ferreira, 1987: Isla del Coco, type locality (Ferreira, 1987); **Isla de Malpelo,** as *Ischnochiton* sp. 1-4 in Kaiser & Bryce (2001).

Circumtropical Species
Clipperton species that are found in warm water masses circumglobally. Tropical eastern Pacific oceanic island records are noted.

BIVALVIA
Malleidae
- *Malleus regulus* (Forskål, 1775): Islas Revillagigedo (Strong & Hanna, 1930); Isla del Coco (Shasky, 1986); Islas Galápagos (Finet, 1985); cosmopolitan in warm water 9°N-23°N (Bernard, 1983).

Pectinidae
- *Delectopecten vitreus* (Gmelin, 1791): a deep-water species that occurs nearly worldwide (Grau, 1959).

Pholadidae
- *Martesia striata* (Linnaeus, 1758): occurs in the tropical and subtropical Atlantic and Pacific Oceans (Keen, 1971).

GASTROPODA
Epitoniidae
- *Epitonium billeeanum* (DuShane & Bratcher, 1965): **Islas Revillagigedo** (K.L. Kaiser Coll. 202534-202537); Isla del Coco (Kaiser & Bryce, 2001); Isla de Malpelo (Birkeland et al., 1975); Islas Galápagos (DuShane & Bratcher, 1965); Indo-Pacific (DuShane, 1985); Red Sea and Madagascar (Oliverio et al., 1997).

Janthinidae
- *Janthina globosa* Blainville, 1822: Islas Revillagigedo (Emerson, 1995); throughout the tropical Pacific and Atlantic Oceans (Keen, 1971).
- *Janthina janthina* (Linnaeus, 1758): **Islas Revillagigedo** (K.L. Kaiser Coll. 202541); **Isla del Coco** (K.L. Kaiser Coll.); Islas Galápagos (Finet, 1985); throughout the warmer parts of the Pacific and Atlantic Oceans (Keen, 1971).

Atlantidae
- *Atlanta fusca* Souleyet, 1852.
- *Atlanta* cf. *gaudichaudi* Souleyet, 1852: Isla de Malpelo (Kaiser & Bryce, 2001).
- *Atlanta inclinata* Souleyet, 1852.
- *Atlanta* cf. *inflata* Souleyet, 1852: Isla de Malpelo (Kaiser & Bryce, 2001).
- *Atlanta* cf. *peroni* Lesueur, 1817: Isla de Malpelo (Kaiser & Bryce, 2001).
- *Atlanta turriculata* d'Orbigny, 1836: **Isla del Coco** (K.L. Kaiser Coll.); Isla de Malpelo (Kaiser & Bryce, 2001).
- *Oxygyrus keraudrenii* (Lesueur, 1817): **Isla del Coco** (K.L. Kaiser Coll.); Isla de Malpelo (Kaiser & Bryce, 2001).

Carinariidae
- *Pterosoma* cf. *planum* (Lesson, 1827).

Pterotracheidae
- *Firoloida desmaresti* Lesueur, 1817.

Ranellidae
- *Cymatium nicobaricum* (Röding, 1798): Isla del Coco (Shasky, 1984); Islas Galápagos (Kay, 1991); Indo-west Pacific, east and west Atlantic (Beu, 1985).

Aglajidae
- *Navanax aenigmaticus* (Bergh, 1894): **Islas Revillagigedo** (pers. comm., A. Hermosillo, 2005); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Gosliner, 1980); southern México to Chile, Caribbean, and Ghana (Gosliner, 1980).

Cavoliniidae
- *Cavolinia* cf. *tridentata* (Niebuhr, 1775): **Isla del Coco** (K.L. Kaiser Coll.); Islas Galápagos (Keen, 1971); warm-water circumglobal species, with a west Pacific distribution from 40°N to 40°S (Bé & Gilmer, 1977).
- *Cavolinia uncinata* (Rang, 1829): Isla del Coco (Mulliner, 1993); Isla de Malpelo (Kaiser & Bryce, 2001); worldwide (45°N to 40°S) (Abbott, 1974).
- *Diacria* cf. *quadridentata quadridentata* (Blainville, 1821): Isla del Coco (Mulliner, 1993); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Shasky, 1989a); warm-water circumglobal (Bé & Gilmer, 1977).
- *Creseis* cf. *acicula* (Rang, 1828): Isla del Coco (Mulliner, 1993); Isla de Malpelo (Kaiser & Bryce, 2001); circumglobal between 45°N and 40°S (Bé & Gilmer, 1977).
- cf. *Hyalocylis striata* (Rang, 1828): Widely distributed in warm seas (Keen, 1971).

Limacinidae
- *Limacina inflata* (d'Orbigny, 1836): Rocas Alijos (McLean & Coan, 1996); Isla del Coco (Mulliner, 1993); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Kaiser, 1997); circumglobal in tropical and subtropical regions of all oceans (Bé & Gilmer, 1977).
- *Limacina bulimoides* (d'Orbigny, 1836): Isla del Coco (Mulliner, 1993); circumglobal warm-water region including the Pacific Ocean from 40°N and 40°S (Bé & Gilmer, 1977).
- *Limacina trochiformis* (d'Orbigny, 1836): Isla del Coco (Mulliner, 1993); Isla de Malpelo (Kaiser & Bryce, 2001); circumglobal warm-water region including the Pacific Ocean from 40°N and 40°S (Bé & Gilmer, 1977).

Aplysiidae
- *Stylocheilus striatus* (Quoy & Gaimard, 1824): Islas Revillagigedo (Mille-Pagaza, Pérez-Chi & Holquín-Quiñones, 1994); Islas Galápagos (Shasky, 1989a); circumtropical (Behrens & Hermosillo, 2005).

Pleurobranchidae
- *Pleurobranchus areolatus* Mörch, 1863: Isla del Coco (Mulliner, 1993); Isla de Malpelo (Kaiser & Bryce, 2001); Islas Galápagos (Sphon & Mulliner, 1972); Santa Barbara, California, throughout the Golfo de California, México, to Colombia; Caribbean and tropical west Africa (Bertsch & Smith, 1973).

Plakobranchidae
- *Elysia flava* Verrill, 1901: Indo-Pacific and Carribean (pers. comm., T.M. Gosliner, 2007).

Dendrodoridae
- *Dendrodoris nigra* (Stimpson, 1855).

Aeolidiidae
- *Anteaeolidiella indica* (Bergh, 1888): **Islas Revillagigedo** (pers. comm., A. Hermosillo, 2005); Islas Galápagos (Debelius, 1996); circumtropical including México (Gosliner & Griffiths, 1981).

Embletoniidae
- *Embletonia gracilis* Risbec, 1928.

Resident (Endemic) Species

Species that were described from Île Clipperton and are still known only to occur at Clipperton.

BIVALVIA

Lucinidae
- *Ctena clippertonensis* Bartsch & Rehder, 1939 (endemic, pers. comm., E.V. Coan, 2006).

Chamidae
- *Chama rubropicta* Bartsch & Rehder, 1939.

GASTROPODA

Pyramidellidae
- *Chrysallida limbaughi* (Hertlein & Allison, 1968).
- *Turbonilla clippertonensis* Hertlein & Allison, 1968.

Succineidae (Pulmonata)
- *Succinea atollica* Hertlein & Allison, 1968.

Western Atlantic Ocean Species Occurring in the Tropical Eastern Pacific

Species that have faunal affinities to the western Atlantic Ocean and occur at Clipperton.

GASTROPODA

Bursidae
- *Bursa corrugata corrugata* (Perry, 1811). Islas Revillagigedo (González-Nakagawa & Sánchez Nava, 1986); Isla del Coco (Montoya, 1983); Isla de Malpelo (Kaiser & Bryce, 2001); southeast Florida to Brazil; Bermuda; Baja California, México to Ecuador (Abbott, 1974).

Architectonicidae
- *Heliacus infundibuliformis perrieri* (Rochebrune, 1881): Islas Galápagos (Hickman & Finet, 1999); western America (Bieler, 1993); Sinaloa, México to Golfo de Chiriquí, Panamá (Robertson *in* Keen, 1971).

APPENDIX 4: BACKGROUND INFORMATION ON 1994, 1998, 2005, 2007 CLIPPERTON EXPEDITIONS WITH MAP OF COLLECTING STATIONS

The following four expeditions were especially undertaken to do scientific research, photography, and particularly on my part, to collect mollusks.

CLIPPERTON 1994 EXPEDITION

Expedition Organizers: Kirstie L. Kaiser and John D. Jackson
Dates: 7 April 1994 – 7 May 1994
Route of Expedition: San Diego, California, USA – Isla Guadalupe, México – Isla San Benedicto, Islas Revillagigedo, México – Isla Roca Partida, Islas Revillagigedo, México – Île Clipperton – Isla Clarión, Islas Revillagigedo, México – Cabo San Lucas, Baja California Sur, México (disembark Expedition members) – San Diego, California

Expedition Vessel: M/V *ROYAL STAR* (San Diego, California); 92 ft length, 25 ft beam (Figure 22)
Owners: Frank Lo Preste and Ted Dunn of Lo Preste Dunn Sportfishing, Inc., San Diego, California
Captain: Tim Ekstrom

Figure 22. The M/V *ROYAL STAR* at Clipperton. Photo: Courtesy of Tim Ekstrom.

EXPEDITION PARTICIPANTS:
Kirstie L. Kaiser, SBMNH and LACM Associate (mollusks)
Henry W. Chaney, SBMNH, Curator of mollusks
Michael Small, SBMNH, Associate (mollusks)
Martin N. Beals, SBMNH, Associate (mollusks)
Charles W. Waters, SBMNH, Associate (mollusks)
D. Ross Robertson, STRI, Panamá, Biologist/ Ichthyologist (fishes)
Gerald R. Allen, WAM, Ichthyologist (fishes)
Robert J. Van Syoc, CAS, Marine Biologist (invertebrates)
Ronald H. McPeak, CAS, Associate, Marine Biologist (invertebrates)
J.E.N. (Charlie) Veron, AIMS, Research Scientist (stony corals)
Peter W. Glynn, RSMAS, U of M, Professor (corals)
Gerard M. Wellington, U of H, Biology Professor (corals)
Andrew R. Zimmerman, U of T, Port Aransas, Marine Geochemist (corals)
David A. Mucciarone, RU, Marine Geologist (corals)
Braddock K. Linsley, RU, Research Geologist (corals)
Robert Houston, RU, student (corals)
Richard Herrmann, photographer
James Black, photographer
Peter Pilafian, cameraman (Documentary POV for Robert Amram)
Lance Milbrand, videographer
Maris Kazmers, Shark Song Photography
E. Theodore Rulison, Jr., video cameraman for Clipperton 1994 Expedition
Expedition Diving Officers: Ronald H. McPeak and James Black
Expedition Medical Doctor: Maris Kazmers, M.D.
Expedition Trawling Logistics: David K. Mulliner

SMITHSONIAN 1998 CLIPPERTON EXPEDITION

Expedition Organizer: D. Ross Robertson, Ph.D., Smithsonian Tropical Research Institute, Panamá
Dates: 17 April – 10 May 1998
Route of Expedition: Vessel arrived from Panamá to board Expedition members at Acapulco, Guerrero, México – Île Clipperton – Acapulco, Guerrero, México – returned to Panamá
Expedition Vessel: R/V *URRACÁ*, Washington D.C., 31 m length, 6.8 m beam (stationed at STRI, República de Panamá) (Figure 23)
Owner: Smithsonian Tropical Research Institute, a bureau of the Smithsonian Institution
Captain: John Gall

EXPEDITION PARTICIPANTS:
Chief Scientist: D. Ross Robertson, STRI
Biologist/Ichthyologist
Kirstie L. Kaiser, SBMNH and LACM, Associate (mollusks)
John L. Earle, BPBM (fishes)
Kenneth Clifton, STRI (fishes)
Stephen Swearer, UCSB (fishes)
Jennifer Caselle, UCSB (fishes)
Juan L. Maté T., U of M (corals)
Expedition Diving Officer: Michael Lang, Smithsonian Institution (cephalopods)

Figure 23. The Smithsonian's R/V *URRACÁ* at Clipperton. Photo: D. Ross Robertson, taken in April 1998.

JEAN-LOUIS ETIENNE EXPÉDITION CLIPPERTON, DECEMBER 2004 - APRIL 2005

Expedition Organizer: Jean-Louis Etienne, Ph.D., Septième Continent
Dates: December 2004 – April 2005 (land-based on Clipperton)
Route of Expedition: Vessel arrived from France to board Expedition members and guests at Acapulco, Guerrero, México – Île Clipperton – Acapulco, Guerrero, México. Rotations were done every three weeks including seven days of transport.
Expedition Vessel: M/S *RARA AVIS* (Brest, France); three masted schooner, 38 m (Figure 24)
Owner: Père Jaouen, France
Captain: Simone Rigal

EXPEDITION PARTICIPANTS FOR ROTATION
13 January through 1 February 2005
Chief Technical Engineer: Camille Fresser, Septième Continent
Chief Medical Officer: Jean-Michel Bompar, M.D.
Chief Scientist: Jean-Marie Bouchard, Septième Continent/MNHN
Chief Diving Officer: Jean-Claude Brive
Kirstie L. Kaiser, SBMNH and LACM, Research Associate (mollusks)
Stéphane Hourdez, CNRS-Station Biologique de Roscoff (physiology of deep-water organisms, worms)
Laurent Albenga, MNHN, scientific diver
Laëtitia Dugrais, MNHN, scientific diver
Mathieu Le Corre, U de la Réunion (physiology of birds)
Henry Wiemerskirch, CNRS (taxonomy of birds)
Roger Swaintson, Freemantle, Western Australia, scientific illustrator
Expedition Chef: Eric Rives
Guests (24 hour stay on Clipperton): French journalists (5) plus Coralie Jugan (attachée de presse, Septième Continent); Marc Guijarro and Bernard Ronot (Gaz de France); Danielle and Jean-Claude Besudo, Bogotá, Colombia

Figure 24. The French motor schooner *RARA AVIS* moored at her permanent site on the southwest side of Clipperton. Photo: Camille Fresser, taken on 17 January 2005 at 7:05 pm.

EXPEDITION ÎLE CLIPPERTON 2007

Expedition Organizers: Mike Lever and Roberto Chávez Arce
Dates: 10 – 26 April 2007
Route of Expedition: Vessel boarded Expedition members at San Jose del Cabo, Baja California Sur, México – Isla San Benedicto – Isla Socorro, Islas Revillagigedo, México – Île Clipperton – Roca Partida, Islas Revillagigedo, México – Cabo San Lucas, Baja California Sur, México

Expedition Vessel: M/V *NAUTILUS EXPLORER* (Vancouver, Canada); 116 ft. (Figure 25)
Owners: Mike Lever, Mary Ann Lever, Judith Flemming, Vancouver, Canada
Captain: Mike Lever
Second Captain: William Frowd
Chief Officer: Aaron Dickson
Chief Technical Engineer: Bob Crawford
Chief Diving Officer: Sten Johansson
Divemasters/Deck Crew: Tim Courtier, Sandy Curtis
Expedition Chef: Enrique Aguilar Loaica
Hostesses: Lauren Mitchell, Nara Crawford

EXPEDITION PARTICIPANTS:
Kirstie L. Kaiser, SBMNH and LACM, Research Associate (mollusks)
Alicia Hermosillo, U of Guadalajara (CUC) (opisthobranchs)
Pedro Medina Rosas, U of Guadalajara (CUC) (corals)
Jeffrey Bozanic (Island Caves Research Center), Huntington Beach, California
Roberto Chávez Arce (co-organizer, videographer), Guadalajara, México
Mary Lynn Price (Expedition videographer), San Diego, California
Harry L. Donenfeld (videographer), Maui, Hawaii
Richard J. Laub (videography), Newport Beach, California
Chris Grossman (photography), Los Angeles, California
Jeff Mondragon (photography), Juneau, Alaska
Steve Clark (photography), Phoenix, Arizona
Jim Stringer (photography), Vancouver, Washington
Elaine Jobin (photography), Alta Loma, California
Robert Goren (videography), Los Angeles, California
Mary Munch (photography), San Jose, California
John Munch (photography), San Jose, California
Bill McCarty (photography), Santa Barbara, California
Antonio Villasante, Puerto Vallarta, México
Margarita Torres, Puerto Vallarta, México
Maria Lourdes (Belin) Villasante, Guadalajara, México
Alberto Manuel Paillaud, Guadalajara, México
Manuel Morales, Puerto Vallarta, México
Janet Davies (photography), Vienna, Austria

Figure 25. The M/V *NAUTILUS EXPLORER* anchored on the southwest side of Clipperton. Photo: Mary Lynn Price, taken on 17 April 2007.

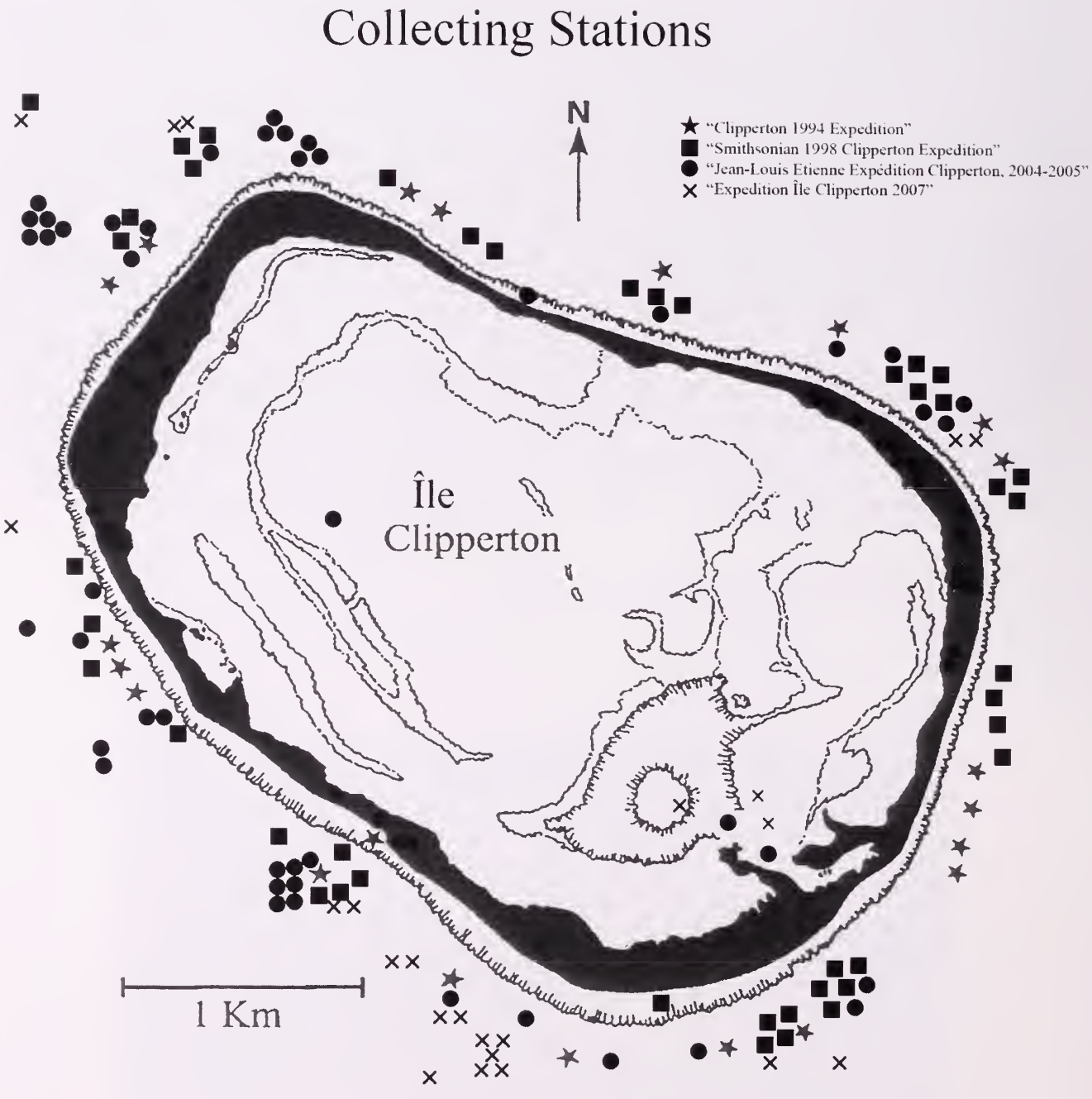


Figure 26. Collecting localities for the four Clipperton Expeditions.
Collecting localities are approximate. Map courtesy of H.W. Chaney and P. Medina Rosas.

Plates 1 through 43 with Figure Legends

Île Clipperton, (10°17'17"N, 109°12'01"W), live, attached with byssus to underside of dead *Porites* sp., 15 m (50 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-15-94), diving from M/V *Royal Star*, 19 Apr. 1994. KLK Coll. 201221. Size: 20.2 mm. Photograph by P. Sadeghian.

Figures 1b, 1c *Acar gradata* (Broderip & Sowerby, 1829).
Île Clipperton, (10°17'09"N, 109°14'00"W) SW side, beach terrace, live, H_2O 83-84°F, leg. H.W. Chaney, diving from M/V *Royal Star*, 17 Apr. 1994, intertidal to 1 m, reef terrace, under rubble. SBMNH 353524. Size: 21.1 mm. Photographs by P. Sadeghian.

Figures 2a, 2b *Barbatia reeveana* (d'Orbigny, 1846).
Île Clipperton, (10°17.490'N, 109°13.566'W) S side, single valve, turnable dead coral in sand, SCUBA, 15-51 m (50-167 ft), H_2O 80-82°F, leg. K.L. Kaiser (ICF-021-05), Jean-Louis Etienne Expedition, 27 Jan. 2005. KLK Coll. 210382. Size: 13.0 mm. Photographs by P. Sadeghian.

Figures 3a, 3b *Barbatia* sp. 1.
Île Clipperton, (10°17'04"N, 109°12'46"W) S-SE side, live, attached with byssus in crevices on underside of dead coral head, 18 m (60 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-6-98), diving from R/V *Urracá*, 21 Apr.- 5 May 1998. KLK Coll. 201229. Size: 4.5 mm (SEMs by D. L. Geiger). Byssus showing in image 3b.

Figure 4 *Barbatia* sp. 1.
Île Clipperton, (10°18'06"N, 109°14'08"W), right valve, shakings of dead coral, 12-15 m (40-50 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-17-94), diving from M/V *Royal Star*, 19 Apr. 1994. KLK Coll. 201232. Size: 4.6 mm (SEM by D. L. Geiger).

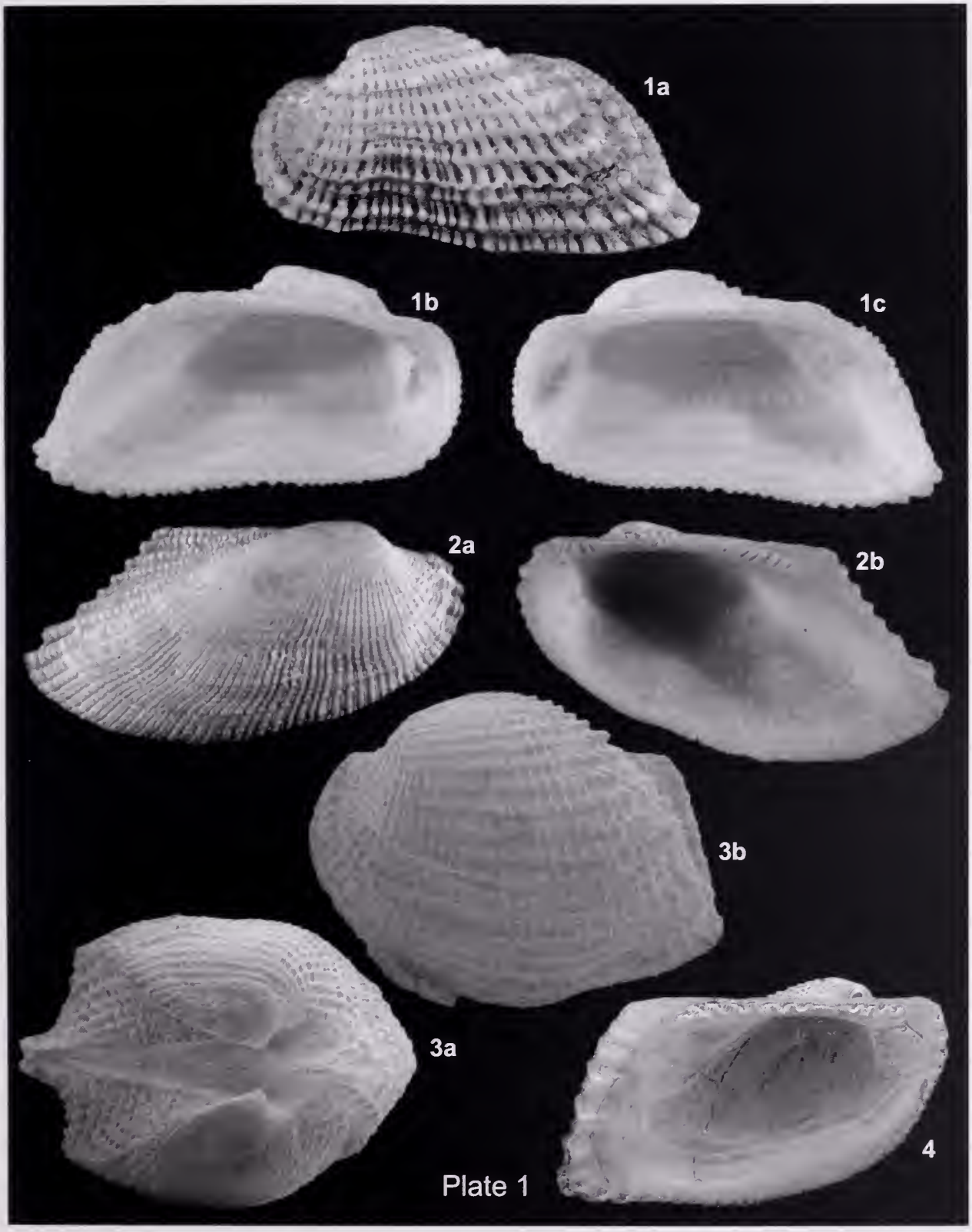


Plate 1

Plate 2

Figure 1 *Philobrya* sp. 1.
Île Clipperton, (10°19'08"N, 109°13'10"W) N end, single valve, shakings of dead coral, 14-27 m (46-95 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-16-98), diving from R/V *Urracá*, 30 Apr. 1998. KLK Coll. 201233. Size: 4.0 mm. Photograph by P. Sadeghian.

Figure 2 *Lithophaga plumula* (Hanley, 1844).
Île Clipperton, (10°19'13"N, 109°14'06"W) NW corner, live, tangle net, boring in coralline algae (lithothamnion nodules, 4-10 cm), 63 m (206 ft), leg. K.L. Kaiser (ICF-2-98), R/V *Urracá*, 04 May 1998. KLK Coll. 201235. Size: 5.0 mm. Valves are cracked. Photograph by P. Sadeghian.

Figures 3a, 3b, 3c, 3d *Lithophaga calyculata* (Carpenter, 1857).
Île Clipperton, (10°19'13"N, 109°14'06"W) NW corner, empty shell, tangle net, boring in coralline algae (lithothamnion nodules, 4-10 cm), 63 m (206 ft), leg. K.L. Kaiser (ICF-2-98), R/V *Urracá*, 4 May 1998. KLK Coll. 201243. Size: 7.0 mm. Photographs by P. Sadeghian.

Figures 4a, 4b *Leiosolenus laevigata* (Quoy & Gaimard, 1853).
Île Clipperton, (10°18'52"N, 109°12'27"W) N-NE side, live, boring in coral mass, 8-21 m (25-70 ft), H_2O 83°F, leg. K.L. Kaiser, diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 201240. Size: 42.8 mm. Photographs by P. Sadeghian.

Figure 5 *Septifer zeteki* Hertlein & Strong, 1946.
Île Clipperton, (10°17'17"N, 109°12'01"W), empty shell, dead *Porites* sp., shakings, 15 m (50 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-15-94), diving from M/V *Royal Star*, 19 Apr. 1994. KLK Coll. 201236. Size: 2.5 mm (SEM by D.L. Geiger).

Figures 6a, 6b *Pinctada mazatlanica* (Hanley, 1856).
Île Clipperton, (10°17'46"N, 109°12'00"W), live, attached with byssus to turnable dead coral, 8-14 m (25-46 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-32-94), diving from M/V *Royal Star*, 25 Apr. 1994. KLK Coll. 201253. Size: 52.0 mm. Photographs by P. Sadeghian.

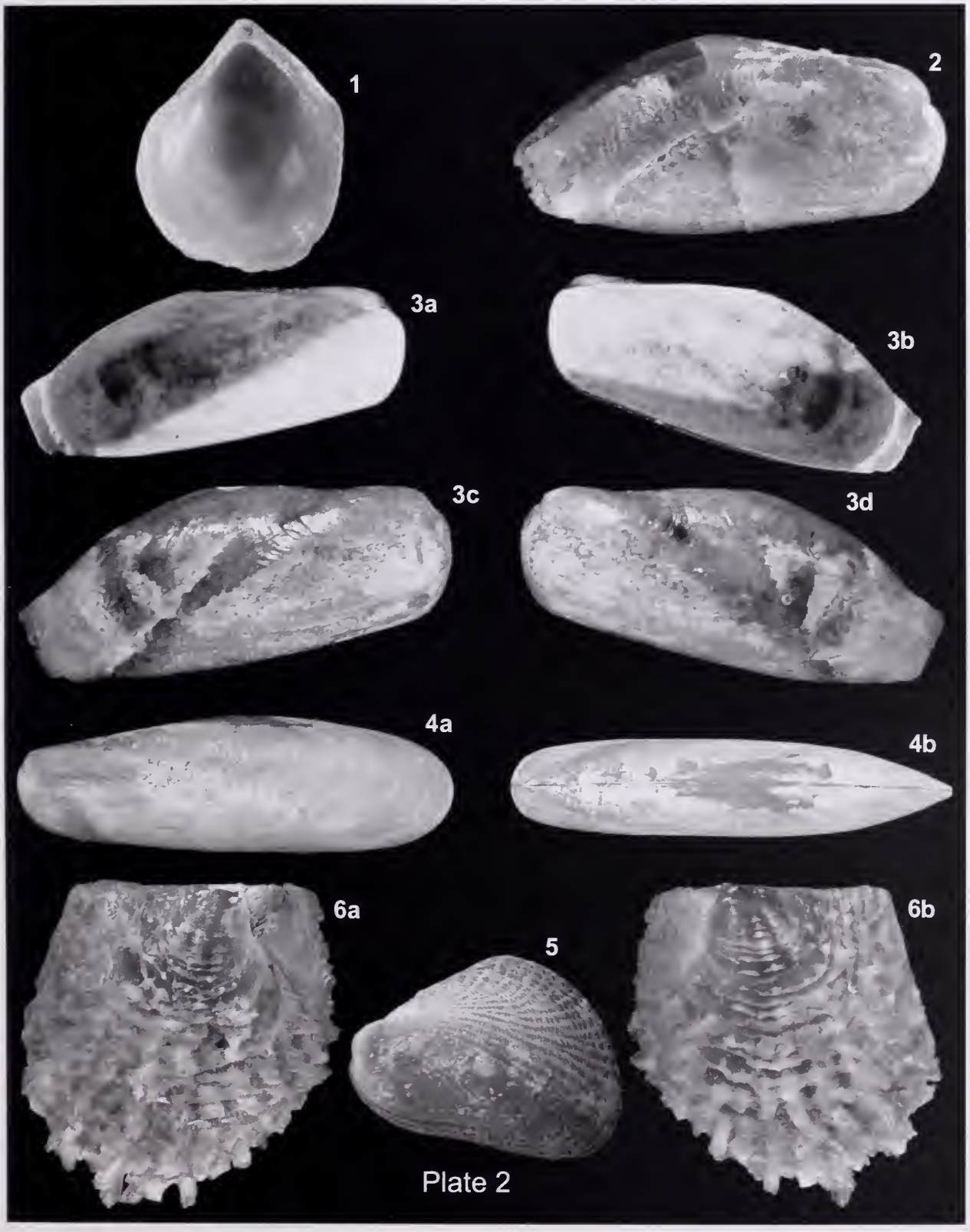


Plate 2

Plate 3

Figure 1 *Isognomon janus* Carpenter, 1857.
Île Clipperton, (10°17.282'N, 109°12.025'W) SE side, live, diving from M/V *Royal Star*, leg. H.W. Chaney, 17-26 Apr. 1994, SCUBA, 10-20 m (33-66 ft), reef slopes, dead coral rubble, H_2O 83-84°F. SBMNH 353418 (wet coll.). Size: 61 mm. Photograph by P. Sadeghian.

Figure 2a *Isognomon recognitus* (Mabille, 1895).
Île Clipperton, (10°19'13"N, 109°14'06"W) NW corner, live, tangle net, attached with byssus to coral rubble, 63 m (206 ft), leg. K.L. Kaiser (ICF-2-98), R/V *Urracá*, 04 May 1998. KLK Coll. 201267. Size: 22.5 mm. Photographs by P. Sadeghian.

Figures 2b, 2c *Isognomon recognitus* (Mabille, 1895).
Close up of hinge area of specimen Figure 2a.

Figure 3 *Malleus regulus* (Forskäl, 1775).
Île Clipperton, (10°18'41"N, 109°12'34"W), empty shell, in coral heads, 12-21 m (40-69 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-1-94), diving from M/V *Royal Star*, 14 Apr. 1994. KLK Coll. 201278. Size: 12.2 mm. Photograph by P. Sadeghian.

Figures 4a, 4b *Malleus regulus* (Forskäl, 1775).
Île Clipperton, (10°16'56"N, 109°12'53"W) S-SE end, live, in crevice of dead coral head, 11-15 m (35-50 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-4-98), diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 201276. Size: 11.9 mm. Photographs by P. Sadeghian.

Figure 5 *Streptopinna saccata* (Linnaeus, 1758).
Île Clipperton, (10°17.310'N, 109°12.191'W), live, attached by byssus in crevice of dead coral heads, 13 m (43 ft), H_2O 80-82°F, leg. K.L. Kaiser (ICF-002-05), Jean-Louis Etienne Expedition, 17 Jan. 2005. KLK Coll. 210399. Size: 130 mm. Photograph by Laurent Albenga.

Figure 6 *Pinna rugosa* Sowerby, 1835.
Île Clipperton, (10°18'17"N, 109°11'52"W), juvenile, empty shell, dead *Pocillopora* sp. shakings, 12-15 m (40-50 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-12-94), diving from M/V *Royal Star*, 18 Apr. 1994. KLK Coll. 201247. Size: 4.3 mm. Photograph by P. Sadeghian.

Plate 3

Plate 4

Figure 1 *Ostrea* sp. 1.
Île Clipperton, (10°18'41"N, 109°12'34"W), live, on dead coral sp., 8-11 m (26-36 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-2-94), diving from M/V *Royal Star*, 14 Apr.1994. KLK Coll. 201298. Size: 20.0 mm. Photograph by P. Sadeghian.

Figures 2a, 2b *Ostrea* sp. 1.
Île Clipperton, (10°17.282' N,109°12.025' W) SE side, live, SCUBA, 10-20 m (33-66 ft), reef slopes, dead coral rubble, diving from M/V *Royal Star*, H_2O 83-84°F, leg. H.W. Chaney, 17-26 Apr. 1994. SBMNH 353520. Photographs by P. Sadeghian.

Figures 3a, 3b, 3c *Ostrea* sp. 2.
Île Clipperton, (10°17'04"N, 109°12'46"W) S-SE corner, empty shell on coral, under dead coral heads, 12-31 m (40-100 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-6-98), R/V *Urracá*, 21 Apr. 1998. KLK Coll. 201304. Size: 21.6 mm. Photographs by P. Sadeghian.

Figures 4a, 4b, 4c *Ostrea* sp. 3.
Île Clipperton, (10°19'09"N, 109°13'08"W), live, attached to turnable dead coral, 12-15 m (40-50 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-20-94), diving from M/V *Royal Star*, 20 Apr.1994. KLK Coll. 201308. Size: 31.5 mm. Photographs by P. Sadeghian.

Figures 5a, 5b *Hyotissa hyotis* (Linnaeus, 1758).
Île Clipperton, (10°17'35"N, 109°12'01"W) E end center, live, attached to live coral, 38 m (125 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-16-98), diving from R/V *Urracá*, 4 May 1998. KLK Coll. 201405. Size: 220.0 mm. Photographs by P. Sadeghian.

Figure 6a *Parahyotissa quercina* (Sowerby, 1871).
Île Clipperton, (10°17.282'N,109°12.025'W) SE side, live, SCUBA, 5 m (16 ft), reef slopes, dead coral rubble, diving from M/V *Royal Star*, H_2O 83-84°F, leg. H.W. Chaney, 17 Apr. 1994. SBMNH 80361. Photograph by P. Sadeghian.

Figure 6b *Parahyotissa quercina* (Sowerby, 1871).
Île Clipperton, (10°18'08"N, 109°14'06"W), live, attached to underside of coral on slope, 12-15 m (40-50 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-21-94), diving from M/V *Royal Star*, 20 Apr. 1994. KLK Coll. 201296. Size: 49.4 mm. Photograph by P. Sadeghian.

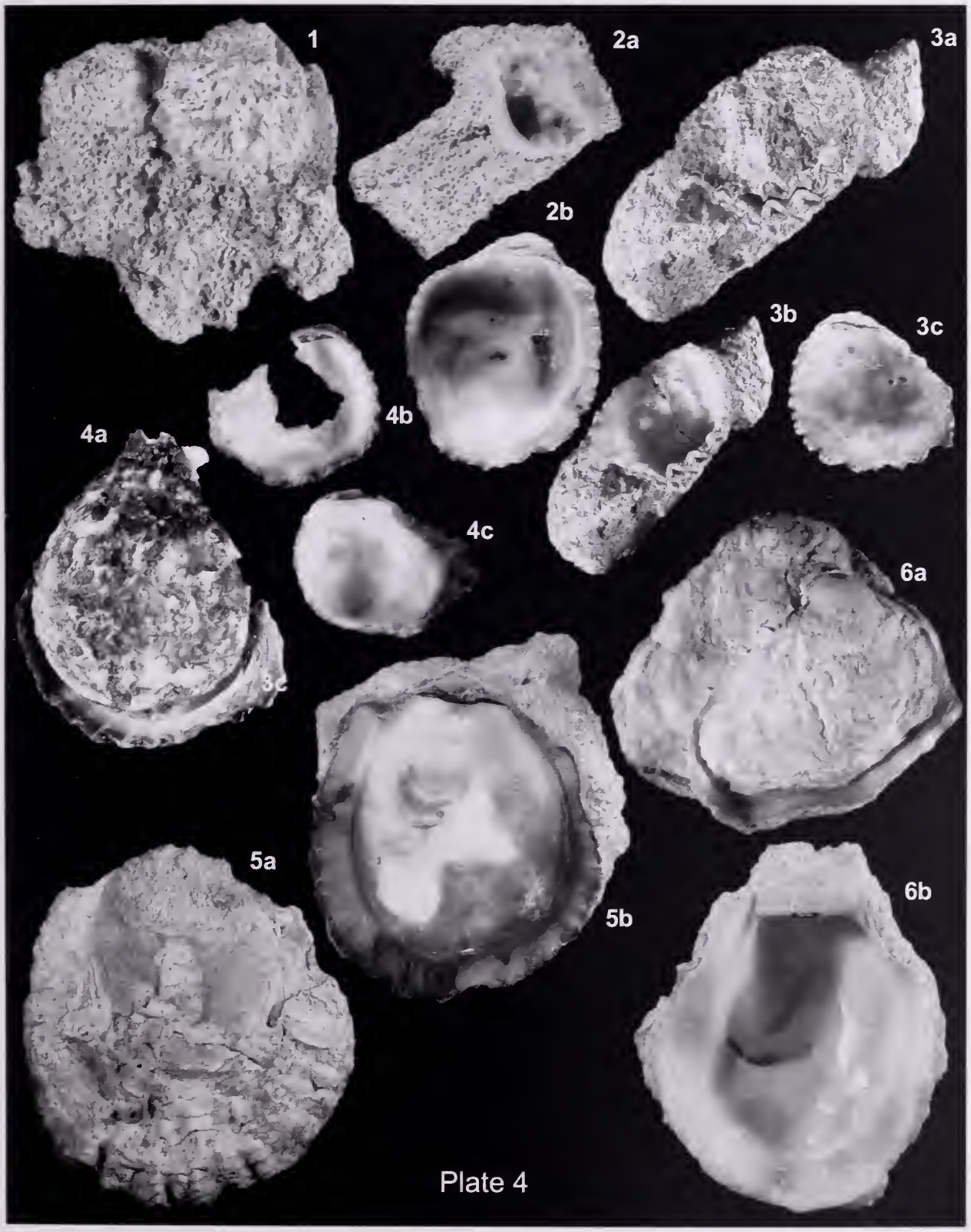


Plate 4

Plate 5

Figures 1a, 1b *Delectopecten vitreus* (Gmelin, 1791).
Île Clipperton, (10°19'45"N, 109°14'37"W) NW corner, live, 113 m (371 ft), sand substrate and living on brown hydroid sp., leg. K.L. Kaiser, D.R. Robertson, et al. (ICF-13-98), trawled from R/V *Urracá*, 28 Apr. 1998. KLK Coll. 201321. Size: 11.6 mm. Photographs by P. Sadeghian.

Figures 2a, 2b *Spondylus linguaefelis* Sowerby, 1847.
Île Clipperton, (10°17'41"N, 109°12'02"W) E side, live, attached to underside of dead coral head, 14-27 m (46-90 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-17-98), diving from R/V *Urracá*, 21 Apr. - 5 May 1998. KLK Coll. 201415. Size: 75.0 mm. Photographs by P. Sadeghian.

Figures 3a, 3b *Codakia distinguenda* (Tryon, 1872).
Île Clipperton, lagoon (10°17.524'N, 109°12.525'W), empty shell in fine silt, leg. K.L. Kaiser (ICF-020-05), Jean-Louis Etienne Expedition, 26 Jan. 2005. KLK Coll. 210019. Size: 57.4 mm. Photographs by P. Sadeghian.

Figures 4a, 4b *Codakia punctata* (Linnaeus, 1758).
Île Clipperton, lagoon (10°17.524'N, 109°12.525'W), empty shell in fine silt, leg. K.L. Kaiser (ICF-020-05), Jean-Louis Etienne Expedition, 26 Jan. 2005. KLK Coll. 210018. Size: 52.8 mm. Photographs by P. Sadeghian.

Figures 5a, 5b *Ctena clarionensis* Hertlein & Strong, 1946.
Île Clipperton, (10°19'07"N, 109°13'55"W), empty shell, sand pockets with coral rubble and *Porites* spp. heads, 14-19 m (46-62 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-9-94), diving from M/V *Royal Star*, 17 Apr.1994. KLK Coll. 201332. Size: 7.3 mm. Photographs by P. Sadeghian.

Figure 5c *Ctena clarionensis* Hertlein & Strong, 1946.
Île Clipperton, (10°19'22"N, 109°13'38"W), live, juvenile, using suction among coral heads and sand. H_2O 80-82°F, leg. K.L. Kaiser, et. al. (ICF-016JLE-05), Jean-Louis Etienne Expedition, 19 Jan. 2005, 55 m (180 ft). KLK Coll. 210006. Size: 1.0 mm (SEM by D.L. Geiger).

Figures 6a, 6b *Ctena clippertonensis* Bartsch & Rehder, 1939.
Île Clipperton, (10°18'41"N, 109°12'34"W), live, turnable dead coral and coral rock in silty sand, snorkeling, 0-1 m (0-3 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-38-94), M/V *Royal Star*, 16 Apr. 1994. KLK Coll. 201327. Size: 11.3 mm. Photographs by P. Sadeghian.

Plate 5

Plate 6

Figures 1a, 1b, 1c *Condylocardia digueti* Lamy, 1916.
Île Clipperton, (10°19.22'N, 109°13.38'W) N side, valve, turnable dead coral in sand, SCUBA, suction, 55 m (180 ft), H_2O 80-82°F, leg. Bouchard, Albenga, Dugrais (ICF-018JLE-05), Jean-Louis Eienne Expedition, 20 Jan. 2005. KLK Coll. 210408. Size: 1.0 mm (SEMs by D.L. Geiger).

Figures 2a, 2b *Chama rubropicta* Bartsch & Rehder, 1939.
Île Clipperton, (10°18.001'N, 109°13.900'W) SW side, live, on coral head, snorkel, 1m (3 ft), H_2O 80-82°F, leg. K.L. Kaiser (ICF-005-05), Jean-Louis Etienne Expedition, 19 Jan. 2005. KLK Coll. 210035. Size: 22.7 mm. Photographs by P. Sadeghian.

Figure 3 *Chama rubropicta* Bartsch & Rehder, 1939.
Île Clipperton, (10°18'07"N, 109°14'07"W), empty shell, H_2O 83°F, leg. K.L. Kaiser (ICF-10-94), diving from M/V *Royal Star*, 17 Apr.1994, 14-18 m (46-59 ft), among coral and rubble pockets. KLK Coll. 201352. Size: 16.7 mm. Photograph by P. Sadeghian.

Figure 4 *Chama rubropicta* Bartsch & Rehder, 1939.
Île Clipperton, (10°17'46"N, 109°12'00"W) SE corner, live, attached to turnable dead coral, 8-14 m (26-46 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-32-94), diving from M/V *Royal Star*, 25 Apr. 1994. KLK Coll. 201359. Size: 11.1 mm. Photograph by P. Sadeghian.

Figures 5a, 5b *Chama* sp. 1.
Île Clipperton, (10°19'45"N, 109°14'37"W) NW corner, live, 113 m (371 ft), sand and brown hydroid sp., H_2O 84°F, leg. K.L. Kaiser, D.R. Robertson, et al. (ICF-13-98), trawled from R/V *Urracá*, 28 Apr. 1998. KLK Coll. 201379. Size: 15.5 mm. Photographs by P. Sadeghian.

Figures 5c, 5d *Chama* sp. 1.
Île Clipperton, (10°19'45"N, 109°14'37"W) NW corner, live, 113 m (371 ft), sand and brown hydroid sp., H_2O 84°F, leg. K.L. Kaiser, D.R. Robertson, et al. (ICF-13-98), trawled from R/V *Urracá*, 28 Apr. 1998. KLK Coll. 201379. Size: 15.5 mm. Photographs by P. Sadeghian.

Figure 6 *Chama* sp. 1.
Île Clipperton, (10°19'45"N, 109°14'37"W) NW corner, live, 113 m (371 ft), sand and brown hydroid sp., H_2O 84°F, leg. K.L. Kaiser, D.R. Robertson, et al. (ICF-13-98), trawled from R/V *Urracá*, 28 Apr. 1998. KLK Coll. 201379. Size: 31.2 mm (cluster). Photograph by P. Sadeghian.

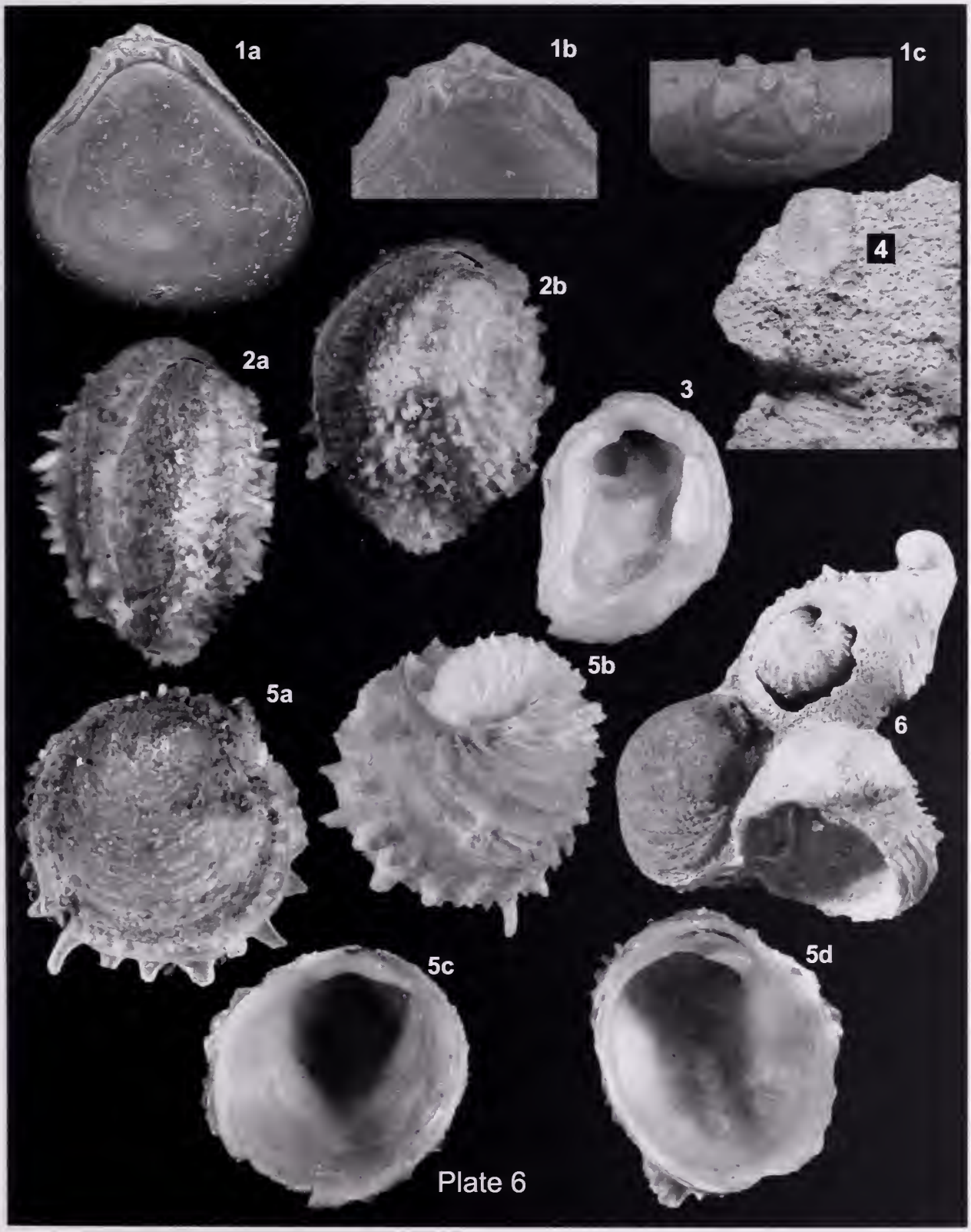

1a
1b
1c
4
2b
2a
3
5b
5a
6
5c
5d
Plate 6

Plate 7

Figures 1a, 1b, 1c *Semele jamesi* Coan, 1988.
Île Clipperton, (10°17.490'N, 109°13.566'W) S side, right valve, turnable dead coral in sand, SCUBA, shakings, 51 m (167 ft), H_2O 80-82°F, leg. K.L. Kaiser (ICF-021-05), Jean-Louis Etienne Expedition, 27 Jan. 2005. KLK Coll. 210411. Size: 3.6 mm (SEMs by D.L. Geiger).

Figure 2a *Rochefortina sandwichensis* (Smith, 1885).
Île Clipperton, (10°18.727'N, 109°12.235'W) NE side, right valve, turnable dead coral in sand, SCUBA, shakings, 13-14 m (43-46 ft), H_2O 78-80°F, leg. K.L. Kaiser (ICF-016-05), Jean-Louis Etienne Expedition, 24 Jan. 2005. KLK Coll. 210006. Size: 4.5 mm. Photograph by P. Sadeghian.

Figure 2b *Rochefortina sandwichensis* (Smith, 1885).
SEM showing the prodisoconch of specimen in Figure 2a (SEM by D.L. Geiger).

Figure 2c *Rochefortina sandwichensis* (Smith, 1885).
SEM showing the hinge of specimen in Figure 2a (SEM by D.L. Geiger).

Figures 2d, 2e *Rochefortina sandwichensis* (Smith, 1885).
Île Clipperton, (10°18.727'N, 109°12.235'W) NE side, left and right valve, turnable dead coral in sand, SCUBA, shakings, 13-14 m (43-46 ft), H_2O 78-80°F, leg. K.L. Kaiser (ICF-016-05), Jean-Louis Etienne Expedition, 24 Jan. 2005. KLK Coll. 210006. Size: 4.5 mm (SEMs by D.L. Geiger).

Figure 2f *Rochefortina sandwichensis* (Smith, 1885).
SEM showing the sculpture of specimen in Figure 2e (SEM by D.L. Geiger).

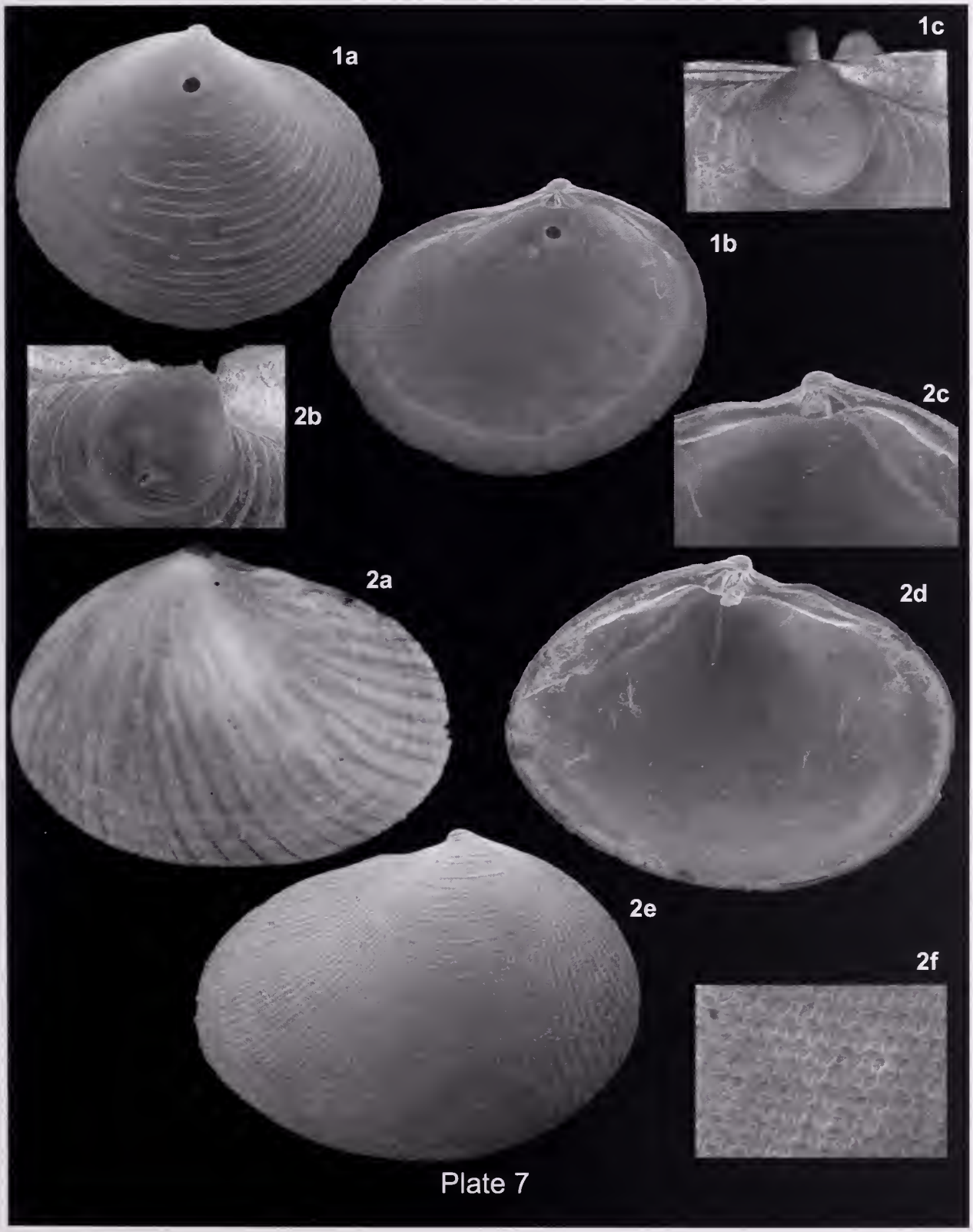


Plate 7

Plate 8

Figures 1a, 1b, 1c *Gastrochaena ovata* Sowerby, 1834.
Île Clipperton, (10°17.533'N, 109°13.617'W), live, boring in coral head, 32 m (105 ft), H_2O 80-82°F, leg. K.L. Kaiser, et. al. (lCF-002JLE-05), Jean-Louis Etienne Expedition, 07 Jan. 2005. KLK Coll. 210025. Size: 16.6 mm. Photographs by P. Sadeghian.

Figure 2 *Gastrochaena ovata* Sowerby, 1834.
Île Clipperton, (10°18'41"N, 109°12'34"W), empty shell, turnable dead coral in sand, 8-11 m (26-36 ft), H_2O 84°F, leg. K.L. Kaiser (lCF-2-94), diving from M/V *Royal Star*, 14 Apr. 1994. KLK Coll. 201384 (specimen in bore hole of coral). Size: ~ 8.5 mm. Photograph by P. Sadeghian.

Figures 3a, 3b Teredinidae sp. 1.
Île Clipperton, (10°18.293'N, 109°12.009'W) SE corner, live, boring in beach drift log, intertidal, leg. K.L. Kaiser and S. Hourdez (lCF-003-05), Jean-Louis Etienne Expedition, 18 Jan. 2005. KLK Coll. 210016. Size: 7.2 mm. Photographs by P. Sadeghian.

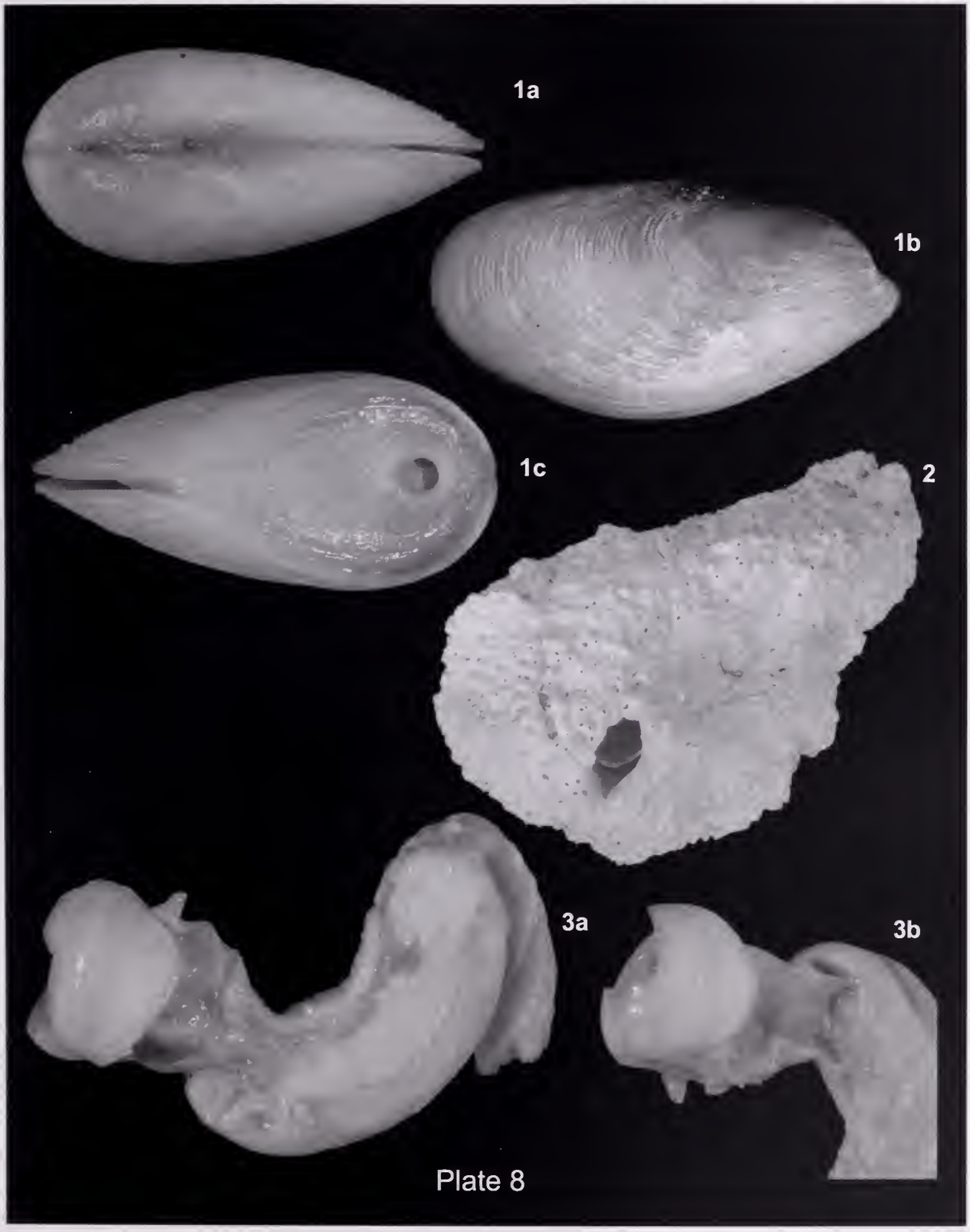


Plate 8

Plate 9

Figures 1a, 1b, 1c, 1d *Sinezona* sp. 1 Geiger, ms.
Île Clipperton, (10°19.219'N, 109°13.394'W) W side, 10-38 m (33-125 ft), shakings, H_2O 80-82°F, leg. K.L. Kaiser (IFC-006-05), Jean-Louis Etienne Expedition, 19 Jan. 2005, KLK Coll. 210047. Size: 0.54 mm (SEMs by D.L. Geiger).

Figures 2a, 2b, 2c, 2d *Scissurella kaiserae* Geiger, 2006.
Île Clipperton, (10°18.280'N, 109°11.860'W), 12-15 m (39-49 ft), dead *Pocillopora* sp. shakings, leg. K.L. Kaiser, diving from M/V *Royal Star,* 18 Apr. 1994, KLK Coll. 210110. Size: 0.49 mm (SEMs by D.L. Geiger).

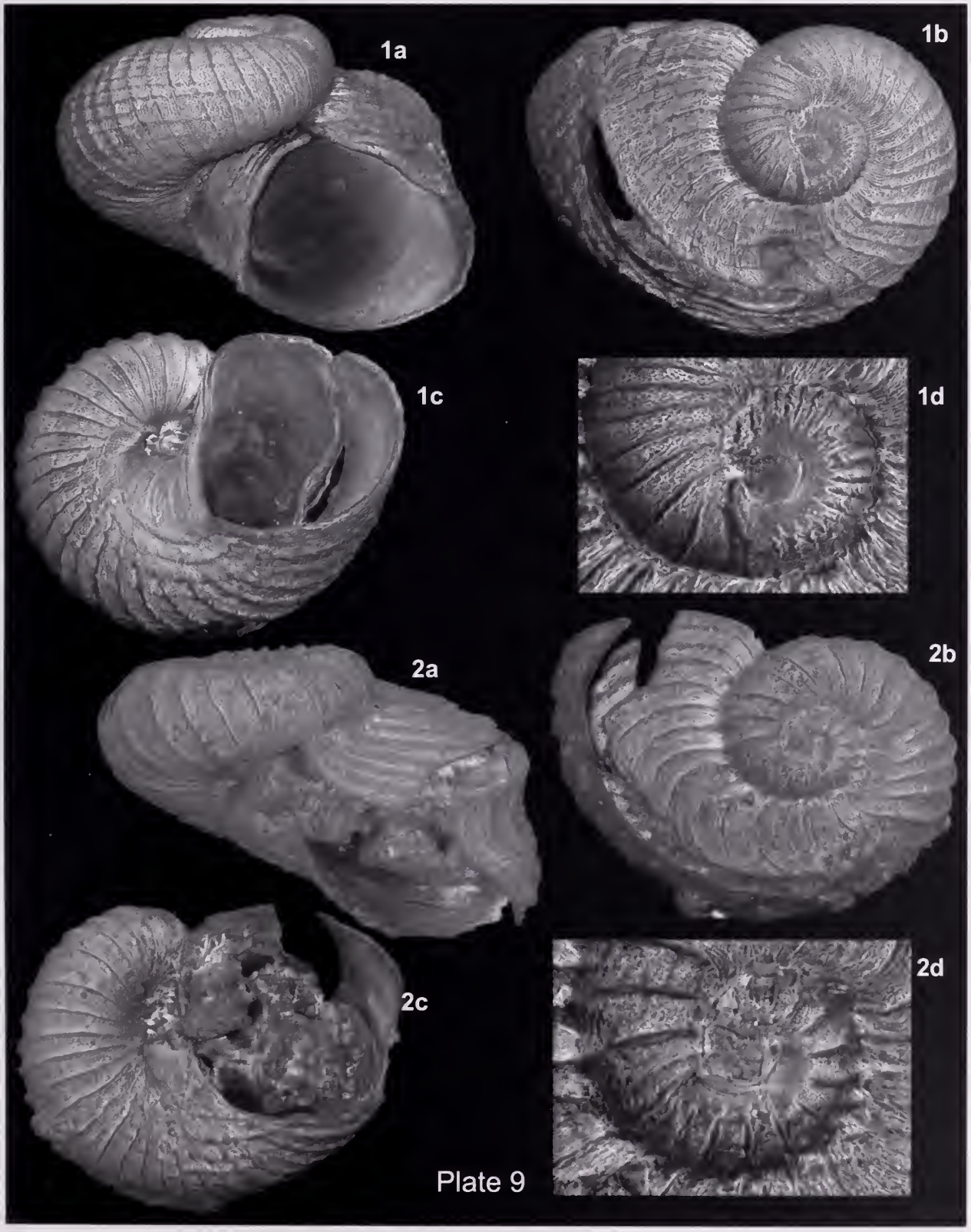

1a
1b
1c
1d
2a
2b
2c
2d
Plate 9

Plate 10

Figures 1a, 1b *Emarginula* sp. 1.
Île Clipperton, (10°18.757'N, 109°12.029'W) NE side, empty shell, turnable dead coral in sand, SCUBA, shakings, 15-45 m (50-147 ft), H_2O 78-80°F, leg. K.L. Kaiser (ICF-019-05), Jean-Louis Etienne Expedition, 26 Jan. 2005. KLK Coll. 210079. Size: 2.2 mm (SEMs by D.L. Geiger).

Figures 2a, 2b *Emarginula* sp. 2.
Île Clipperton, (10°I8.757'N, 109°12.029'W) NE side, empty shell, turnable dead coral in sand, SCUBA, shakings, 15-45 m (49-147 ft), H_2O 78-80°F, leg. K.L. Kaiser (ICF-019-05), Jean-Louis Etienne Expedition, 26 Jan. 2005. KLK Coll. 210080. Size: 2.4 mm (SEMs by D.L. Geiger).

Figures 3a, 3b *Diodora granifera* (Pease, 1861).
Île Clipperton, (10°17'10"N, 109°13'15"W), live (with dried animal), on underside of dead *Pocillopora* sp. coral, 11-17 m (36-56 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-4-94), diving from M/V *Royal Star*, 15 Apr. 1994. KLK Coll. 200524. Size: 11.1 mm. Photographs by P. Sadeghian.

Figures 4a, 4b *Diodora* cf. *punctifissa* McLean, 1970.
Île Clipperton, (10°17'01"N, 109°12'47"W), live, turnable dead coral heads, 12-16 m (39-52 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-31-94), diving from M/V *Royal Star*, 24 Apr. 1994. KLK Coll. 200528. Size: 11.5 mm. Photographs by P. Sadeghian.

Figure 5 *Diodora* cf. *punctifissa* McLean, 1970.
Île Clipperton, (10°19.22'N, 109°13.38'W) SW side, empty shell, turnable dead coral in sand, SCUBA, manual, 55 m (180 ft), H_2O 80-82°F, leg. Bouchard, Albenga, Dugrais (ICF-016JLE-05), Jean-Louis Etienne Expedition, 19 Jan. 2005. KLK Coll. 210034. Size: 11.6 mm. Photograph by P. Sadeghian.

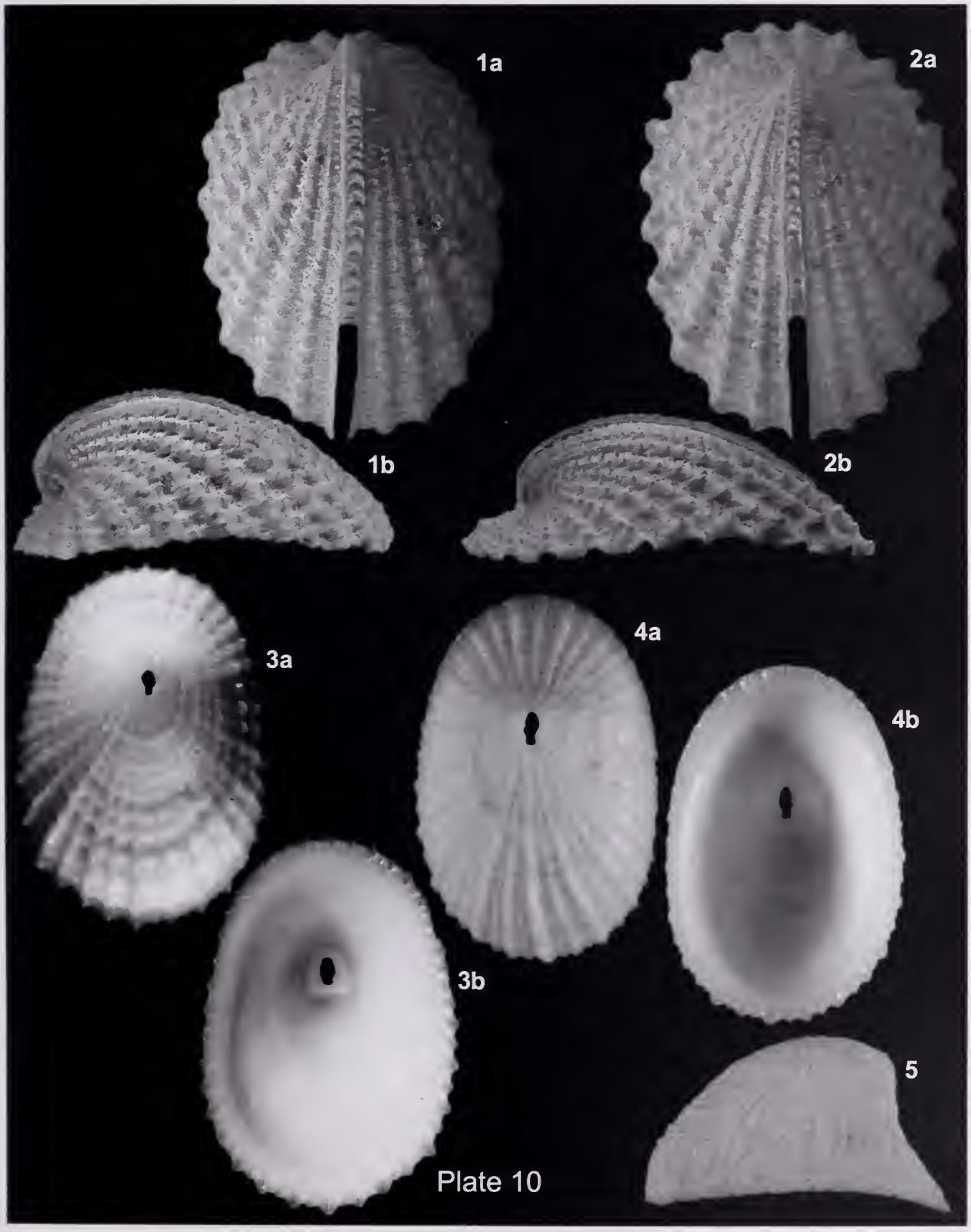

1a
2a
1b
2b
3a
4a
4b
3b
5
Plate 10

Plate 11

Figure 1 *Pachystremiscus solitarius* Hertlein & Allison, 1968.
Île Clipperton, (10°19'08"N, 109°13'10"W) N side, live, shakings of dead coral, 14-27 m (46-89 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-16-98), diving from R/V *Urracá*, 02 May 1998. KLK Coll. 200537. Size: 0.73 mm (SEM by D.L. Geiger). Operculum showing in aperture.

Figures 2a, 2b *Pachystremiscus solitarius* Hertlein & Allison, 1968.
Île Clipperton, (10°19.219'N, 109°13.394'W) W side, empty shell, turnable dead coral in sand, SCUBA, shakings, 10-38 m (33-125 ft), H_2O 80-82°F, leg. K.L. Kaiser (ICF-006-05), Jean-Louis Etienne Expedition, 19 Jan. 2005. KLK Coll. 210046. Size: 0.69 mm (SEMs by D.L. Geiger).

Figures 3a, 3b *Pachystremiscus* sp. 1.
Île Clipperton, (10°19'23"N, 109°14'22"W) NW side, empty shell, coral rubble and sand, 91 m (300 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-40-94), dredging from M/V *Royal Star* inflatable, 23 Apr. 1994. KLK Coll. 200540. Size: 0.53 mm (SEMs by D.L. Geiger). Debris showing in aperture.

Figures 4a, 4b *Pachystremiscus* sp. 2.
Île Clipperton, (10°17'17"N, 109°12'01"W), empty shell, dead *Porites* sp. shakings, 15 m (50 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-15-94), diving from M/V *Royal Star*, 19 Apr.1994. KLK Coll. 200541. Size: 0.69 mm (SEMs by D.L. Geiger).

Figures 5a, 5b cf. *Eulithidium diantha* McLean, 1970.
Île Clipperton, (10°17'41"N, 109°12'02"W) E side, empty shell, shakings of dead coral, 14-27 m (46-89 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-17-98), diving from R/V *Urracá*, 02 May 1998. KLK Coll. 200542. Size: 0.7 mm (SEMs by D.L. Geiger). Debris showing in aperture.

Plate 11

Plate 12

Figures 1a, 1b *Nerita plicata* Linnacus, 1758.
Île Clipperton, (10°17.16'N, 109°12.45'W) SE corner, live, beach terrace, intertidal on coral rock, leg. K.L. Kaiser (ICF-12-98), R/V *Urracá*, 28 Apr. 1998. KLK Coll. 200543. Size: 20.8 mm. Photographs by P. Sadeghian.

Figures 2a, 2b, 2c *Plesiothyreus osculans* (C.B. Adams, 1852).
Île Clipperton, (10°19.342'N, 109°13.405'W) NW side, empty shell, turnable dead coral in sand, SCUBA, shakings, 17 m (56 ft), H_2O 80°F, leg. K.L. Kaiser (ICF-013-05), Jean-Louis Etienne Expedition, 23 Jan. 2005. KLK Coll. 210092. Size: 2.0 mm (SEMs by D.L. Geiger). Figure 2c is an internal view.

Figures 3a, 3b *Littoraria coccina* (Gmelin, 1791).
Île Clipperton, (10°17'16"N, 109°12'45"W) SE corner, live, on coral rock, intertidal, PM low tide, leg. K.L. Kaiser (ICF-12-98), R/V *Urracá*, 28 Apr. 1998. KLK Coll. 200546 = SBMNH 345467 (voucher). Size: 13.0 mm. Photographs by P. Sadeghian.

Figures 4a, 4b *Littoraria pintado pullata* (Carpenter, 1864).
Île Clipperton, (10°17'09" N, 109°14'00"W) beach terrace, live, on coral rock, high intertidal, leg. K.L. Kaiser, M/V *Royal Star*, 17 Apr. 1994, KLK Coll. 200547. Size: 13.2 mm. Photographs by P. Sadeghian.

Figure 5 *Littoraria undulata* (Gray, 1839).
Île Clipperton, (10°18.805'N, 109°12.809'W) N shore, live, high intertidal on coral rock, leg. K.L. Kaiser (ICF-003-05), Jean-Louis Etienne Expedition, 18 Jan. 2005. KLK Coll. 210097. Size: 20.7 mm. Photograph by P. Sadeghian.

Figures 6a, 6b *Nodilittorina modesta* (Philippi, 1846).
Île Clipperton, (10°17'16"N, 109°12'45"W) SE corner, live, on coral rock, intertidal, PM low tide, leg. K.L. Kaiser (ICF-12-98), R/V *Urracá*, 28 Apr. 1998. KLK Coll. 200545. Size: 16.1 mm. Photographs by P. Sadeghian.

1a
2b
2c
2a
1b
4a
4b
3b
3a
6a
5
6b
Plate 12

Plate 13

Figures 1a, 1b *Alvania* sp. 1.
Île Clipperton, (10°18'58"N, 109°13'02"W) N side, live, shakings of dead coral, 9-30 m (30-99 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-14-98), diving from R/V *Urracá*, 29 Apr. 1998. KLK Coll. 200549. Size: 1.3 mm (SEMs by D.L. Geiger).

Figures 2a, 2b *Onoba* sp. 1.
Île Clipperton, (10°18'17"N, 109°11'52"W), empty shell, dead *Pocillopora* sp. shakings, 9-15 m (30-50 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-14-94), diving from M/V *Royal Star*, 18 Apr. 1994. KLK Coll. 200551. Size: 1.73 mm (SEMs by D.L. Geiger).

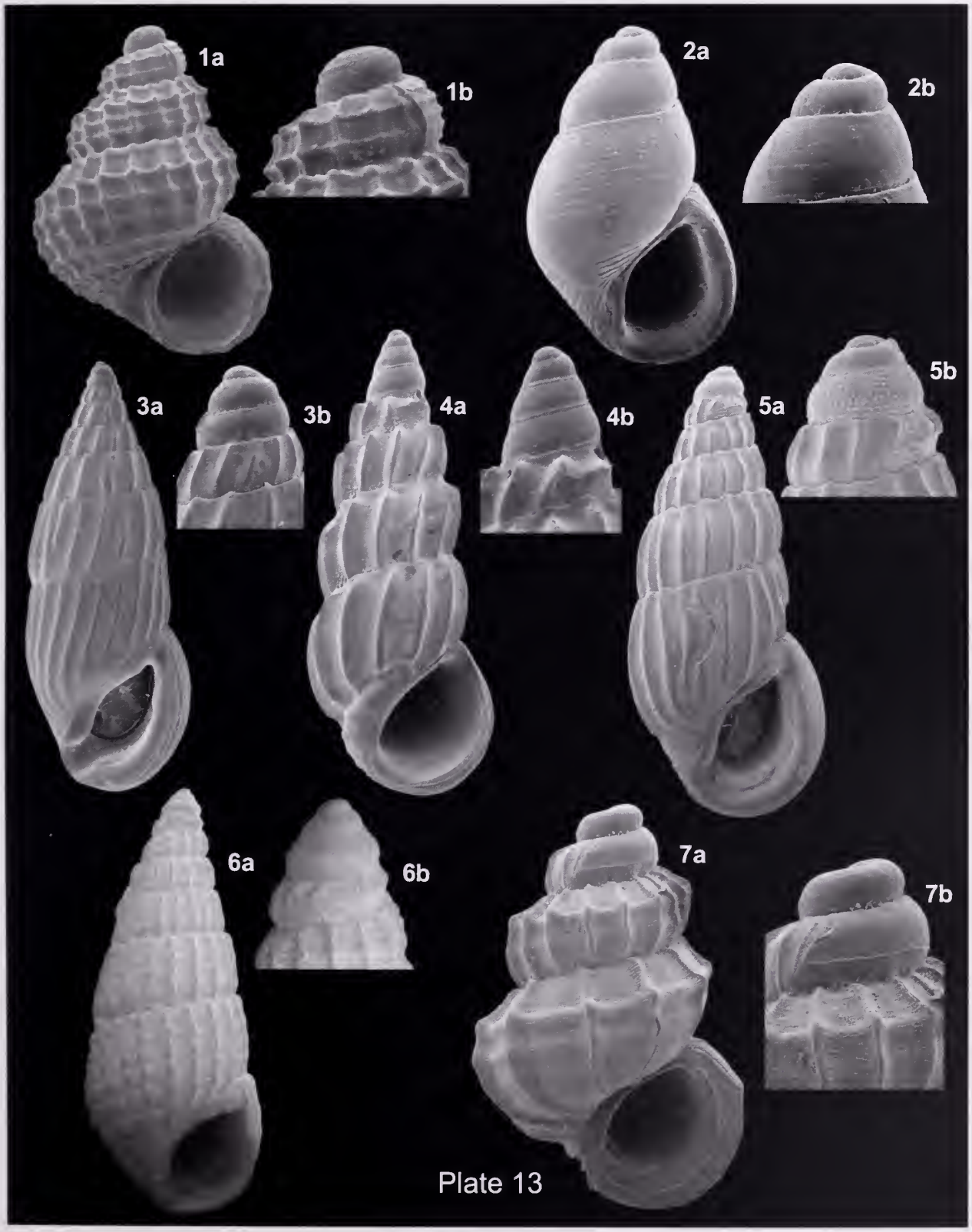
Figures 3a, 3b *Rissoina stricta* Menke, 1850.
Île Clipperton, (10°17'08.1"N, 109°13'16.8"W), SW side, live, dead coral rubble shakings, 10-20 m (33-66 ft), H_2O 83-84°F, leg. H.W. Chaney, diving from M/V *Royal Star*, 15-20 Apr. 1994. SBMNH 210120. Size: 4.5 mm (SEMs by D.L. Geiger).

Figures 4a, 4b *Rissoina* (*Rissoina*) sp. 1.
Île Clipperton, (10°19'08"N, 109°13'10"W) N side, empty shell, shakings of dead coral, 12-29 m (40-95 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-16-98), diving from R/V *Urracá*, 30 Apr. 1998. KLK Coll. 200553. Size: 2.1 mm (SEMs by D.L. Geiger).

Figures 5a, 5b *Rissoina* sp. 2.
Île Clipperton, (10°19.057'N, 109°13.560'W), NW side, empty shell, reef slopes, dead coral rubble shakings, 10-20 m (33-66 ft), H_2O 83-84°F, leg. H.W. Chaney, diving from M/V *Royal Star*, 17-20 Apr. 1994. SBMNH 210122. Size: 2.9 mm (SEMs by D.L. Geiger). Debris in aperture.

Figures 6a, 6b *Rissoina* sp. 3.
Île Clipperton, (10°18.757'N, 109°12.029'W) NE side, empty shell, turnable dead coral in sand, SCUBA, shakings, 33 m (108 ft), H_2O 78-80°F, leg. K.L. Kaiser (ICF-019-05), Jean-Louis Etienne Expedition, 26 Jan. 2005. KLK Coll. 210101. Size: 3.1 mm (SEMs by D.L. Geiger).

Figures 7a, 7b *Parashiela* sp. 1.
Île Clipperton, (10°17'08"N, 109°13'16"W) N side, empty shell, SCUBA, reef slopes, shakings of dead coral rubble, 10-20 m (33-66 ft), H_2O 83-84°F, leg. H.W. Chaney, diving from M/V *Royal Star*, 15-20 April 1994. SBMNH 210121. Size: 1.2 mm (SEMs by D.L. Geiger).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Figures 1a, 1b *Barleeia* sp. 1.
Île Clipperton, (10°18'41"N, 109°12'34"W), empty shell, shakings of dead coral lying in coralline sand pockets, 8-11 m (26-36 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-2-94), diving from M/V *Royal Star*, 14 Apr. 1994. KLK Coll. 200555. Size: 1.4 mm (SEMs by D.L. Geiger).

Figures 2a, 2b *Assiminea* sp. 1.
Île Clipperton, (10°17'16"N, 109°12'45"W) SE corner, empty shell, among coral rock, intertidal, PM low tide, H_2O 84°F, leg. K.L. Kaiser (ICF-12-98), R/V *Urracá*, 28 Apr. 1998. KLK Coll. 200966. Size: 3.9 mm. Protoconch broken. Photographs by P. Sadeghian.

Figures 3a, 3b *Lirobarleeia* cf. *nigrescens* (Bartsch & Rehder, 1939).
Île Clipperton (10°18'00"N, 109°12'00"W), empty shell, 1958, LACM 58-7. Size 1.39 mm (SEMs by D.L. Geiger).

Figure 4 cf. *Lirobarleeia* sp. 1.
Île Clipperton, (10°17.493'N, 109°13.538'W) S end landing site, empty shell, shakings of dead coral, 9-27 m (30-90 ft), H_2O 84°F, leg. K.L. Kaiser, diving from R/V *Urracá*, 21 Apr. - 5 May 1998. KLK Coll. 210102. Size: 0.9 mm (SEM by D.L. Geiger).

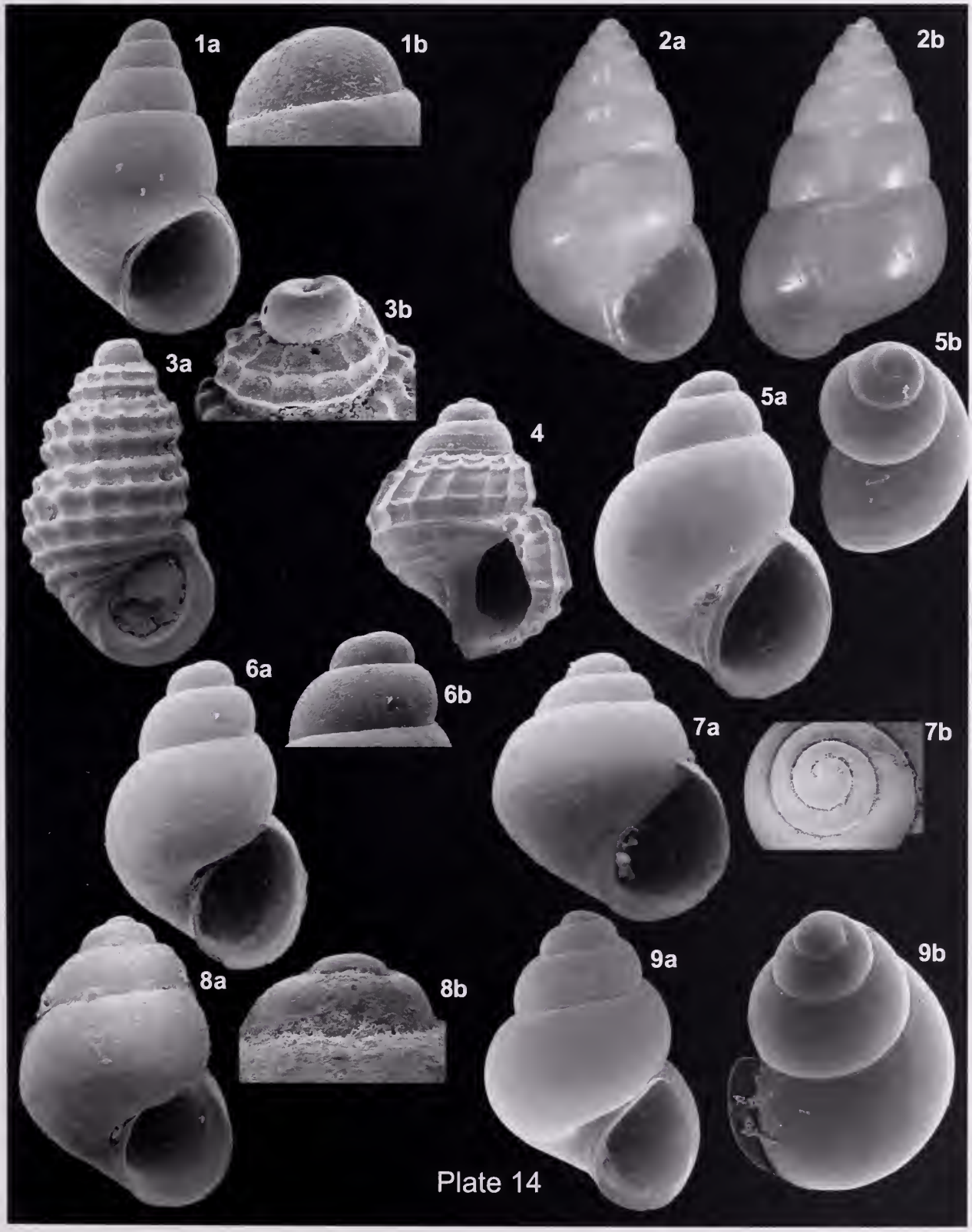
Figures 5a, 5b *Elachisina* sp. 1.
Île Clipperton, (10°19'18"N, 109°13'43"W) NW corner, live, shakings of dead coral, 12-30 m (40-100 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-7-98), diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 200557. Size: 866 µm, operculum 333 µm (SEMs by D.L. Geiger). Operculum showing in aperture.

Figures 6a, 6b *Elachisina* sp. 2.
Île Clipperton, (10°17'17"N, 109°12'01"W),?live, dead *Porites* sp., shakings, 15 m (50 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-15-94), diving from M/V *Royal Star*, 19 Apr. 1994. KLK Coll. 200556. Size: 0.94 mm (SEMs by D.L. Geiger). Juvenile (single adult specimen lost).

Figures 7a, 7b cf. *Elachisina* sp. 3.
Île Clipperton, (10°19'08"N, 109°13'10"W) N side, ?live, shakings of dead coral, 12-29 m (40-95 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-16-98), diving from R/V *Urracá*, 30 Apr. 1998. KLK Coll. 200562. Size: 1.08 mm (SEMs by D.L. Geiger).

Figures 8a, 8b cf. *Elachisina* sp. 4.
Île Clipperton, (10°18'00"N, 109°12'00"W), empty shell, 1958, LACM 58-7, Size: 1.0 mm (SEMs by D.L. Geiger).

Figures 9a, 9b cf. *Elachisina* sp. 5.
Île Clipperton, (10°18'00"N, 109°12'00"W), live, leg. H. W. Chaney, diving from R/V *Urracá,* SBMNH. Size: 1.2 mm (SEMs by D.L. Geiger). Operculum showing on Figure 9b.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Figures 1a, 1b, 1c *Solariorbis* sp. 1.
Île Clipperton, (10°19.219'N, 109°13.394'W) SW side, empty shell, turnable dead coral in sand, SCUBA, suction, 55 m (180 ft), H_2O 80-82°F, leg. Bouchard, Albenga, Dugrais (ICF-007-05), Jean-Louis Etienne Expedition, 20 Jan. 2005. KLK Coll. 210103. Size: 2.25 mm (SEMs by D.L. Geiger). Aperture partially broken.

Figures 2a, 2b Vitrinellidae sp. 1.
Île Clipperton, (10°19'08"N, 109°13'10"W), N side, empty shell, shakings of dead coral, 12-29 m (40-95 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-16-98), diving from R/V *Urracá*, 30 Apr. 1998. KLK Coll. 200563. Size: 1.04 mm (SEMs by D.L. Geiger). Debris showing in aperture.

Figures 3a, 3b, 3c *Fartulum* cf. *glabriforme* Carpenter, 1857.
Île Clipperton, (10°19'08"N, 109°13'10"W) N side, live, shakings of dead coral, 12-29 m (40-95 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-16-98), diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 200565. Size: 1.45 mm (SEMs by D.L. Geiger). Operculum showing in aperture of Figures 3a and 3c (0.11 mm).

Figure 4 *Fartulum* sp. 1.
Île Clipperton, (10°18'41"N, 109°12'34"W), empty shell, slope of prolific *Pocillopora* spp., shakings, 12-21 m (40-69 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-1-94), diving from M/V *Royal Star*, 14 Apr. 1994. KLK Coll. 200567. Size: 1.6 mm (SEM by D.L. Geiger). Debris showing in aperture.

Figures 5a, 5b *Modulus* sp. 1.
Île Clipperton, (10°19'13"N, 109°14'06"W) NW corner, empty shell, tangle net, sand and coralline algae (lithothamnion nodules, 4-10 cm), 62 m (206 ft), leg. K.L. Kaiser (ICF-2-98), R/V *Urracá*, 4 May 1998. KLK Coll. 200568. Size: 7.5 mm. Photographs by P. Sadeghian.

Figure 6a *Modulus* sp. 1.
Île Clipperton, (10°19'13"N, 109°14'06"W) NW corner, empty shell, tangle net, sand with coralline algae (lithothamnion nodules, 4-10 cm), 62 m (206 ft), leg. K.L. Kaiser (ICF-2-98), R/V *Urracá*, 4 May 1998. KLK Coll. 200568. Size: 1.55 mm. (SEMs by D.L. Geiger). Debris showing in aperture.

Figure 6b *Modulus* sp. 1.
Close up SEM of protoconch of specimen Figure 6a.

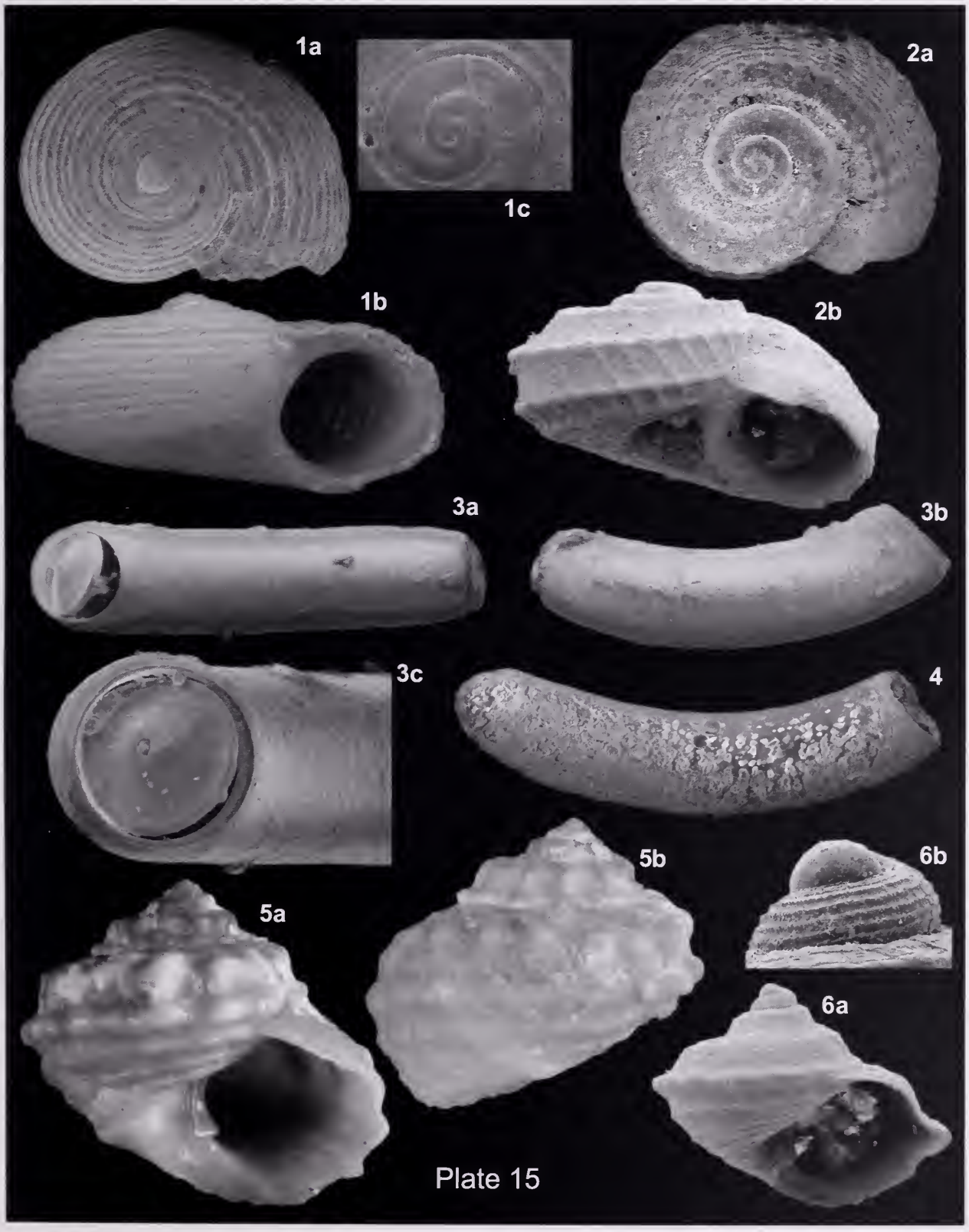
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Plate 15

Plate 16

Figure 1 *Petaloconchus* cf. *keenae* Hadfield & Kay, 1972.
Île Clipperton, (10°18'52"N, 109°12'27"W) N-NE side, live, underside of dead coral head in sand, 8-21 m (25-70 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-15-98), diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 200612. Size: 32.8 mm, coiled. Photograph by P. Sadeghian.

Figure 2 *Petaloconchus* cf. *keenae* Hadfield & Kay, 1972.
Île Clipperton, (10°17'04"N, 109°12'46"W) S-SE corner, empty shell, under turnable dead coral head, 12-30 m (40-100 ft), leg. K.L. Kaiser (ICF-6-98), diving from R/V *Urracá*, 21 Apr.-5 May 1998. KLK Coll. 200602. Size: 10.0 mm, aperture, 2.0 mm. Photographs by P. Sadeghian.

Figure 3 *Eualetes* cf. *tulipa* (Chenu, 1843).
Île Clipperton, (10°19'23"N, 109°14'22"W), empty shell, dredged, 91 m (300 ft), leg. K.L. Kaiser (ICF-40-94), M/V *Royal Star*, 23 Apr. 1994. KLK Coll. 201393. Size: 42.0 mm. Photograph by P. Sadeghian.

Figure 4 *Petaloconchus* sp. 1.
Île Clipperton, (10°19'07"N, 109°13'55"W), ?live, SCUBA/ shakings, sand pockets with rubble and *Porites* spp. heads, 14-19 m (46-62 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-9-94), diving from M/V *Royal Star*, 17 Apr. 1994. KLK Coll. 200600. Size: 6.0 mm. Photograph by P. Sadeghian.

Figures 5a, 5b *Dendropoma meroclista* Hadfield & Kay, 1972.
Île Clipperton, (10°17'16"N, 109°12'45"W) SE corner, colony of empty shells embedded in coralline algae on coral rock, intertidal. PM low tide, leg. K.L. Kaiser, R/V *Urracá*, 28 Apr. 1998. KLK Coll. 200618. Size: Figure 5a, 48.0 mm (coral rock): Figure 5b, 3.8 mm (two specimens). Photographs by P. Sadeghian.

Figure 6 *Dendropoma* sp. 1.
Île Clipperton, (10°19'23"N, 109°14'22"W), live, shakings of dead coral, 91 m (300 ft), leg. K.L. Kaiser (ICF-40-94), dredged, M/V *Royal Star*, 23 Apr. 1994. KLK Coll. 200579. Size: 5.50 mm. Photograph by P. Sadeghian. Operculum showing in fractured shell.

Figure 7 *Cerithium* cf. *atromaginatum* Dautzenberg & Bouge, 1933.
Île Clipperton, (10°17.447'N, 109°13.265'W) SW side, crabbed, turnable coral rock on sand, snorkeling, 0-1m (0-3 ft), H_2O 82°F, leg. K.L. Kaiser (ICF-017-05), Jean-Louis Etienne Expedition, 24 Jan. 2005. KLK Coll. 210135. Size: 11.0 mm. Photograph by P. Sadeghian.

Figures 8a, 8b *Cerithium echinatum* Lamarck, 1822.
Île Clipperton, (10°19'03"N, 109°13'59"W) NW corner, empty shell, under turnable dead coral, 9-12 m (30-40 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-11-98), diving from R/V *Urracá*, 27 Apr. 1998. KLK Coll. 200622. Size: 23.6 mm. Photographs by P. Sadeghian.

Figures 9a, 9b *Cerithium maculosum* Kiener, 1841.
Île Clipperton, (10°18.001'N, 109°13.900'W) SW side, live, sand and coral rock, snorkeling, 1 m (3 ft), H_2O 82°F, leg. K.L. Kaiser (ICF-005-05), Jean-Louis Etienne Expedition, 19 Jan. 2005. KLK Coll. 210037. Size: 37.8 mm. Photographs by P. Sadeghian.

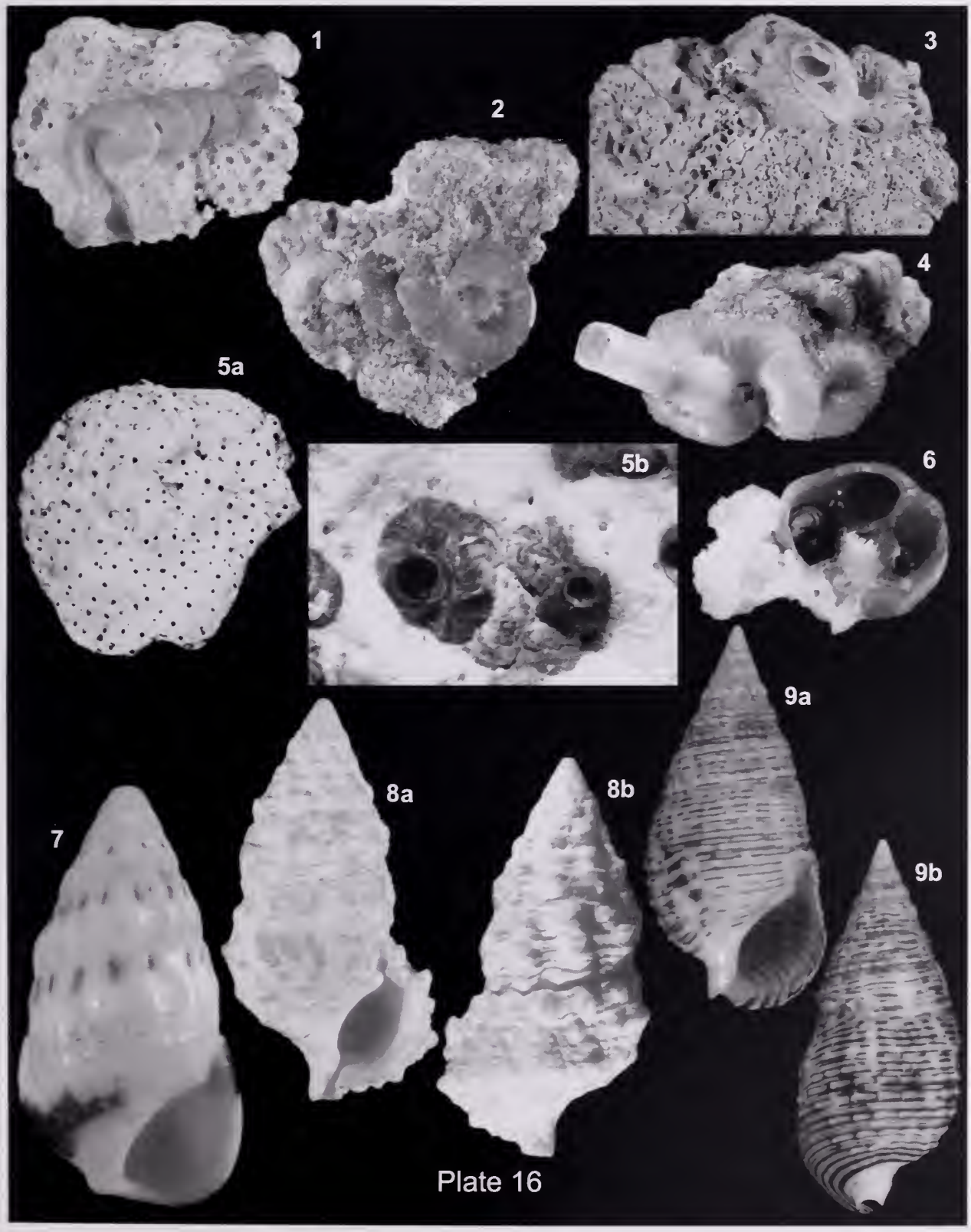


Plate 16

Plate 17

Figures 1a, 1b *Cerithium* sp. 1.
Île Clipperton, (10°17'29"N, 109°13'32"W), S end landing site, live, underside of dead coral, 9-18 m (30-60 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-3-98), diving from R/V *Urracá*, 21 Apr.1998. KLK Coll. 200627. Size: 9.2 mm. Photographs by P. Sadeghian.

Figures 1c, 1d *Cerithium* sp. 1.
SEMs by D.L. Geiger of specimen in Figure 1a.

Figures 2a, 2b *Cerithium* sp. 2.
Île Clipperton, (10°18'58"N, 109°13'02"W), N side, empty shell, under dead coral head, 9-30 m (30-99 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-14-98), diving from R/V *Urracá*, 29 Apr. 1998. KLK Coll. 200636. Size: 6.5 mm (SEMs by D.L. Geiger).

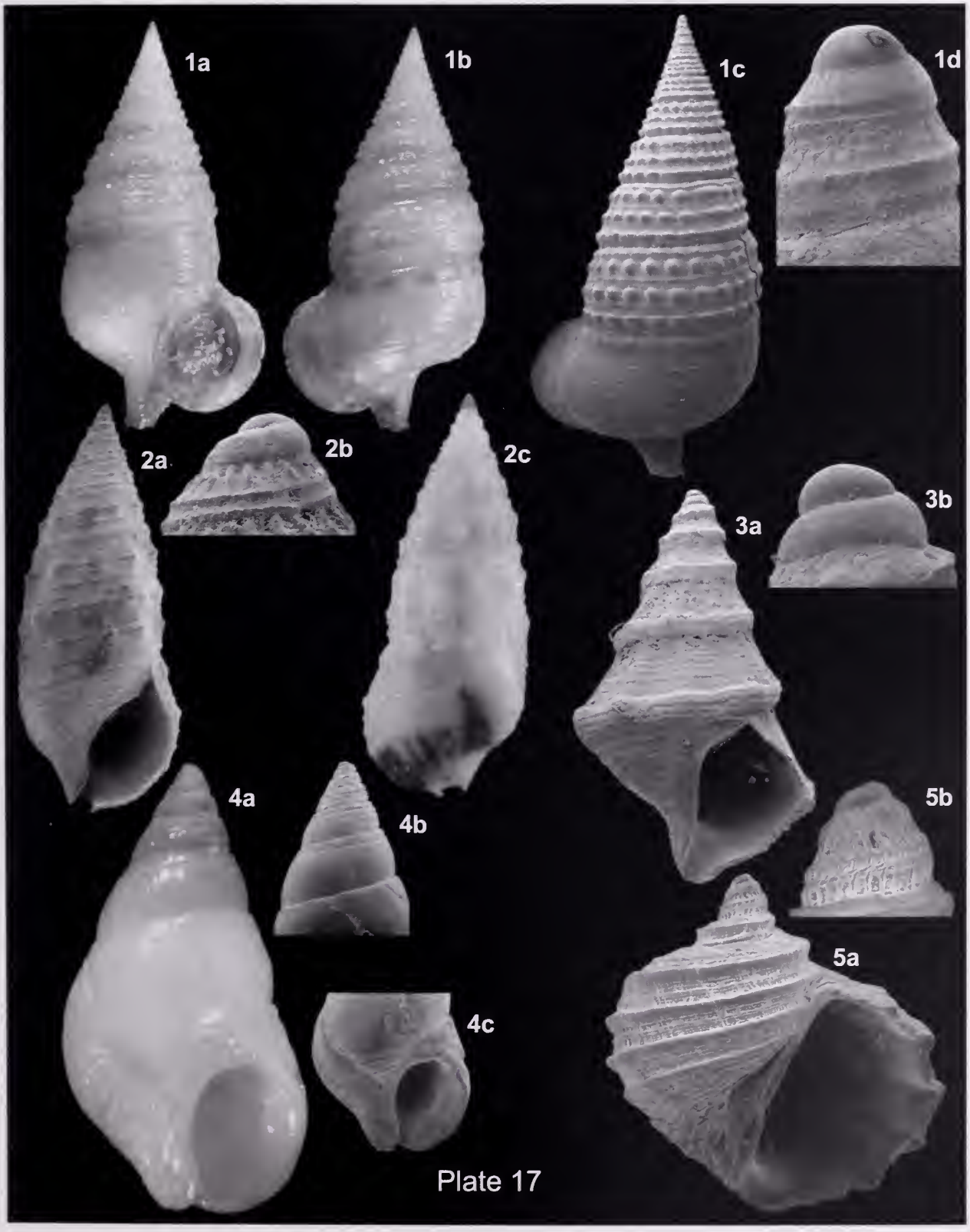
Figure 2c *Cerithium* sp. 2.
Light image of specimen in Figure 2a. Photograph by P. Sadeghian.

Figures 3a, 3b cf. Cerithiidae sp. 1.
Île Clipperton, (10°17'29"N, 109°13'32"W), S end landing site, live, shakings, under dead coral head, 9-27 m (30-90 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-3-98), diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 200637. Size: 2.76 mm (SEMs by D.L. Geiger).

Figure 4a *Angiola* sp. 1.
Île Clipperton, (10°17'16"N, 109°12'45"W), SE corner, empty shell, under dead coral, intertidal, PM low tide, leg. K.L. Kaiser (ICF-12-98), R/V *Urracá*, 28 Apr. 1998. KLK Coll. 200968. Size: 6.7 mm. Photograph by P. Sadeghian.

Figures 4b, 4c *Angiola* sp. 1.
SEMs by D.L. Geiger of specimen in Figure 4a.

Figures 5a, 5b *Fossarus* cf. *angulatus* Carpenter, 1857.
Île Clipperton, (10°19.01'N, 109°13.76'W), SW side, empty shell, suction, dead coral in sand, 17 m (56 ft), H_2O 80-82°F, leg. K.L. Kaiser, Bouchard, Albenga (ICF-038JLE-05), Jean-Louis Etienne Expedition, 28 Jan. 2005. KLK Coll. 210137. Size: 1.3 mm (SEMs by D.L. Geiger).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Figures 1a, 1b *Epitonium emydonesus* Dall, 1917.
Île Clipperton, (10°19.219'N, 109°13.394'W) SW side, empty shell, turnable dead coral in sand, SCUBA, suction, 55 m (180 ft), H_2O 80-82°F, leg. Bouchard, Albenga, Dugrais (ICF-007-05), Jean-Louis Etienne Expedition, 20 Jan. 2005. KLK Coll. 210138. Size: 2.8 mm (SEMs by D.L. Geiger).

Figures 2a, 2b *Epitonium billeeanum* (DuShane & Bratcher, 1965).
Île Clipperton, (10°17'29"N, 109°13'32"W), S end landing site, live, on *Tubastrea* sp. attached to coral slab, 15 m (50 ft), H_2O 84°F, leg. K.L. Kaiser, diving from R/V *Urracá*, 4 May 1994. KLK Coll. 200644. Size: 10.6 mm. Photographs by P. Sadeghian.

Figures 3a, 3b, 3c *Epitonium* sp. 1.
Île Clipperton, (10°17'35"N, 109°12'01"W) east end, center, live, underside of dead coral head on host coral sp., 38 m (125 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-5-98), diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 200639 (not coated). Size: 5.64 mm, protoconch w. 236 µm, h. 230 µm (SEMs by D.L. Geiger).

Figures 4a, 4b *Epitonium* sp. 2.
Île Clipperton, (10°19'08"N, 109°13'10"W) N side, live, shakings from under dead coral head, 12-29 m (40-95 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-16-98), diving from R/V *Urracá*, 16 Apr. 1994. KLK Coll. 200640. Size: 2.63 mm (SEMs by D.L. Geiger).

Figure 5 *Epitonium* sp. 3.
Île Clipperton, (10°18'41"N, 109°12'34"W), empty shell (early juvenile), steep slope of *Pocillopora* spp., shakings, 12-29 m (40-95ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-8-94), diving from M/V *Royal Star*, 19 Apr. 1994. KLK Coll. 200556. Size: 880 µm (SEM by D.L. Geiger). Debris showing in aperture.

Figures 6a, 6b *Graphis* sp. 1.
Île Clipperton, (10°19'08"N, 109°13'10"W) N side, live, shakings of dead coral, 12-29 m (40-95 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-16-98), diving from R/V *Urracá*, 30 Apr. 1998. KLK Coll. 201192. Size: 1.32 mm (SEMs by D.L. Geiger). Debris showing in aperture.

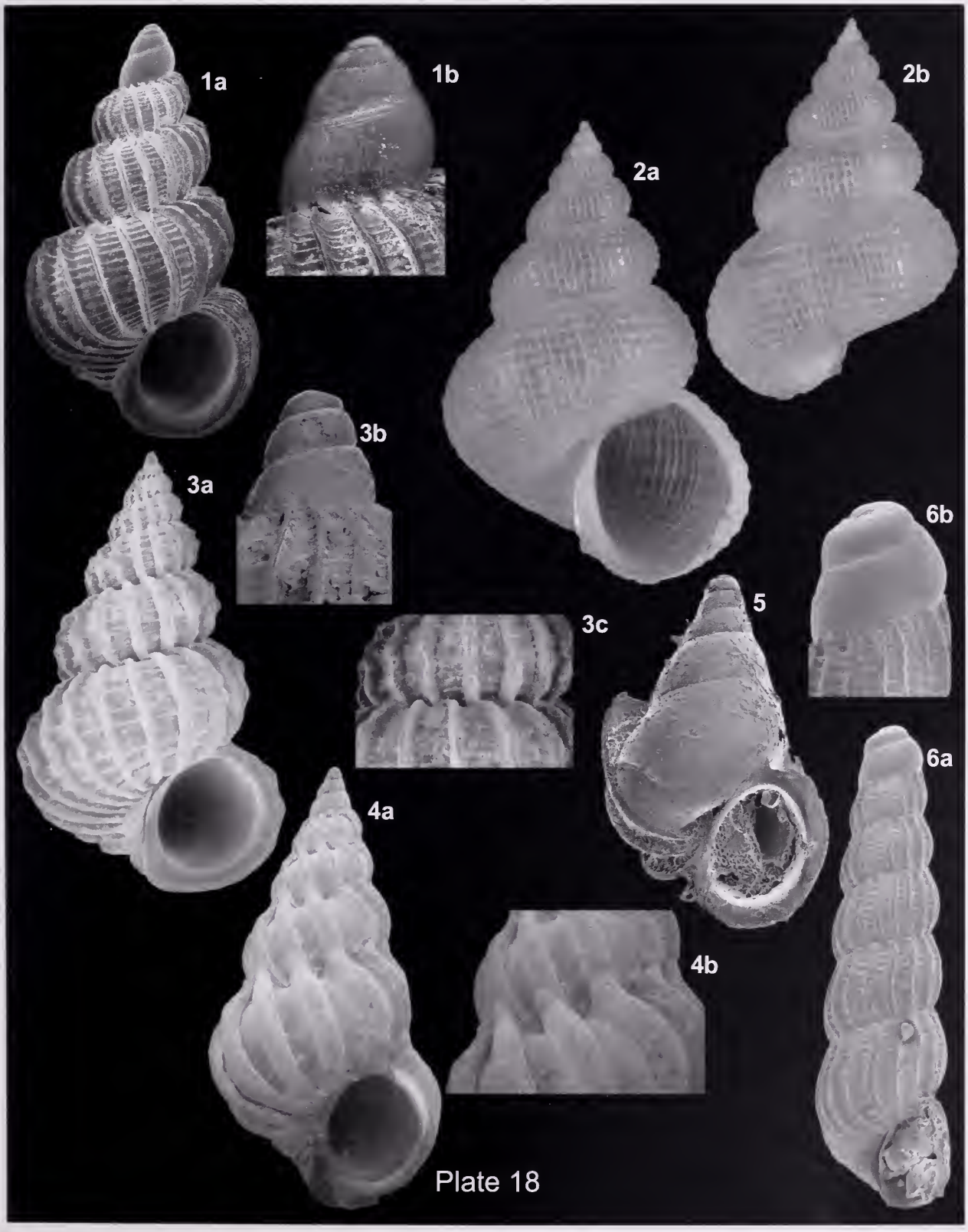
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Figure 1 *Melanella cumingii* (A. Adams, 1854).
Île Clipperton, (10°19'00"N, 109°12'00"W) N end, live, under dead coral head, no holothurian seen under same coral head, 9-15 m (30-50 ft), H_2O 84°F, leg. K.L. Kaiser, diving from R/V *Urracá*, 30 Apr. 1998. KLK Coll. 210023 (wet coll.). Size: 7.0 mm. Photograph by P. Sadeghian.

Figures 2a, 2b *Melanella dufresnei* Bowdich, 1822.
Île Clipperton, (10°16'56"N, 109°12'53"W) S-SE end, live, under dead coral head, 11-15 m (35-50 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-4-98), diving from R/V *Urracá*, 22 Apr. 1998. KLK Coll. 200695. Size: 32.5 mm. Photographs by P. Sadeghian.

Figure 3a *Melanella* cf. *exilis* (Pease, 1863).
Île Clipperton, (10°19.00'N, 109°12.00'W) N end, live, under dead coral, 9-15 m (30-50 ft), H_2O 84°F, leg. K.L. Kaiser, diving from R/V *Urracá*, 30 Apr. 1998. KLK Coll. (wet) 210417. Size: 4.7 mm (SEM by D.L. Geiger).

Figure 3b *Melanella* cf. *exilis* (Pease, 1863).
Île Clipperton, (10°18'56"N, 109°12'52"W), live, on *Euapa godeffroyi* under coral head, 11-14 m (36-45 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-24-94), diving from M/V *Royal Star*, 22 Apr. 1994. KLK Coll. 200682. Size: 4.14 mm (SEM by D.L. Geiger, not coated).

Figures 4a, 4b *Melanella thaanumii* (Pilsbry, 1917).
Île Clipperton, (10°19.00'N, 109°12.00'W) N end, live, under dead coral head in sand, 9-15 m (30-50 ft), H_2O 84°F, leg. K.L. Kaiser, diving from R/V *Urracá*, 30 Apr. 1998. KLK Coll. (wet w/ host) 210418. Size: 21.6 mm. Photographs by P. Sadeghian.

Figure 5 *Melanella* sp. 1.
Île Clipperton, (10°19'08"N, 109°13'10"W) N end, live, under dead coral, 12-29 m (40-95 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-16-98), diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 200652. Size: 3.91 mm (SEM by D.L. Geiger, not coated).

Figure 6 *Melanella* sp. 2.
Île Clipperton, (10°19'08"N, 109°13'10"W) N end, live, under dead coral, 12-29 m (40-95 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-16-98), diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 200661. Size: 3.3 mm (SEM by D.L. Geiger, not coated).

Figure 7 *Melanella* sp. 3.
Île Clipperton, (10°17'29"N, 109°13'30"W), live, steep slope of *Pocillopora* spp., shakings, 12-43 m (40-141 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-7-94), diving from M/V *Royal Star*, 16 Apr. 1994. KLK Coll. 200716. Size: 6.8 mm (SEM by D.L. Geiger, not coated). Operculum showing in aperture.

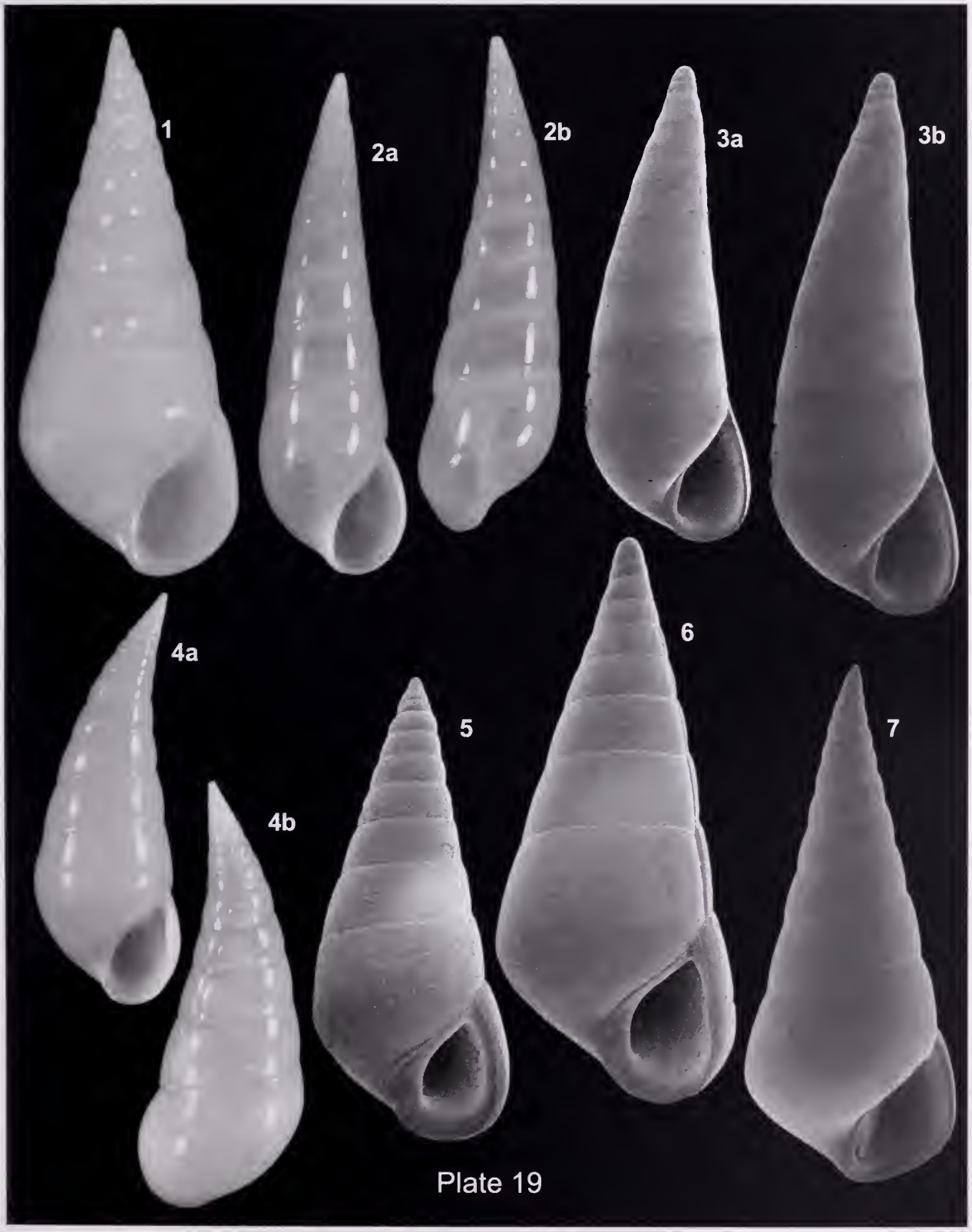
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Plate 20

Figures 8a, 8b *Melanella* sp. 4.
Île Clipperton, (10°17'29"N, 109°13'32"W) S end landing site, live, on black holothurian under dead coral in sand, 9 m (30 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-3-98), diving from R/V *Urracá*, 24 Apr. 1998. KLK Coll. 200697. Size: 16.9 mm. Photographs by P. Sadeghian.

Figure 9 *Melanella* sp. 5.
Île Clipperton, (10°17'29"N, 109°13'32"W) S end landing site, ?live, under dead coral in sand, 27- 40 m (90-132 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-3-98), diving from R/V *Urracá*, 1 May 1998. KLK Coll. 200712. Size: 4.9 mm (SEM by D.L. Geiger, not coated).

Figure 10 *Melanella* sp. 6.
Île Clipperton, (10°17'13"N, 109°12'46"W), live, under dead *Porites lobata*, 12-18 m (39-60 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-22-94), diving from M/V *Royal Star*, 21 Apr. 1994. KLK Coll. 200726. Size: 6.4 mm. Photograph by P. Sadeghian.

Figure 11 *Melanella* sp. 7.
Île Clipperton, (10°17'52"N, 109°14'00"W) W side, live, under dead coral, 6-12 m (20-40 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-9-98), diving from R/V *Urracá*, 25 Apr. 1998. KLK Coll. 200696. Size: 23.4 mm. Photograph by P. Sadeghian.

Figures 12a, 12b cf. *Sabinella* sp. 1.
Île Clipperton, (10°19'13"N, 109°14'06"W) NW corner, live, tangle net, sand, coralline algae (lithothamnion nodules, 4-10 cm), 62 m (206 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-2-98), R/V *Urracá*, 4 May 1998. KLK Coll. 200714. Size: 1.58 mm (SEMs by D.L. Geiger, not coated). Debris showing in aperture.

Figure 13 cf. *Sabinella* sp. 2.
Île Clipperton, (10°19'09"N, 109°13'08"W), live, coral sp. shakings, 12-15 m (39-49 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-20-94), diving from M/V *Royal Star*, 18 Apr. 1994. KLK Coll. 200713. Size: 1.02 mm (SEM by D.L. Geiger, not coated). Debris showing in aperture.

Figure 14 cf. *Scalenostoma* sp. 1.
Île Clipperton, (10°18.727'N, 109°12.235'W) NE side, empty shell, turnable dead coral and sand, SCUBA, 13-14 m (43-46 ft), shakings, H_2O 78-80°F, leg. K.L. Kaiser (ICF-016-05), Jean-Louis Etienne Expedition, 24 Jan. 2005. KLK Coll. 210416. Size: 1.9 mm (SEM by D.L. Geiger). Protoconch missing.

Figure 15a Eulimidae sp. 1.
Île Clipperton, (10°18'17"N, 109°11'52"W), live, coral rubble demolition, shakings, 12 m (39 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-13-94), diving from M/V *Royal Star*, 18 Apr. 1994. KLK Coll. 200666. Size: 4.3 mm. Photograph by P. Sadeghian.

Figure 15b Eulimidae sp. 1.
Île Clipperton, (10°17'29"N, 109°13'32"W) S end landing site, live, under dead coral in sand, 9-27 m (30-90 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-3-98), diving from R/V *Urracá*, 1 May 1998. KLK Coll. 200664. Size: 2.58 mm (SEM by D.L. Geiger, not coated).

Figure 16 Eulimidae sp. 2.
Île Clipperton, (10°19.342'N, 109°13.405'W) NW side, live, turnable dead coral and sand, SCUBA, 17 m (56 ft), shakings, H_2O 80°F, leg. K.L. Kaiser (ICF-013-05), Jean-Louis Etienne Expedition, 23 Jan. 2005. KLK Coll. 210141. Size: 3.3 mm (SEM by D.L. Geiger).

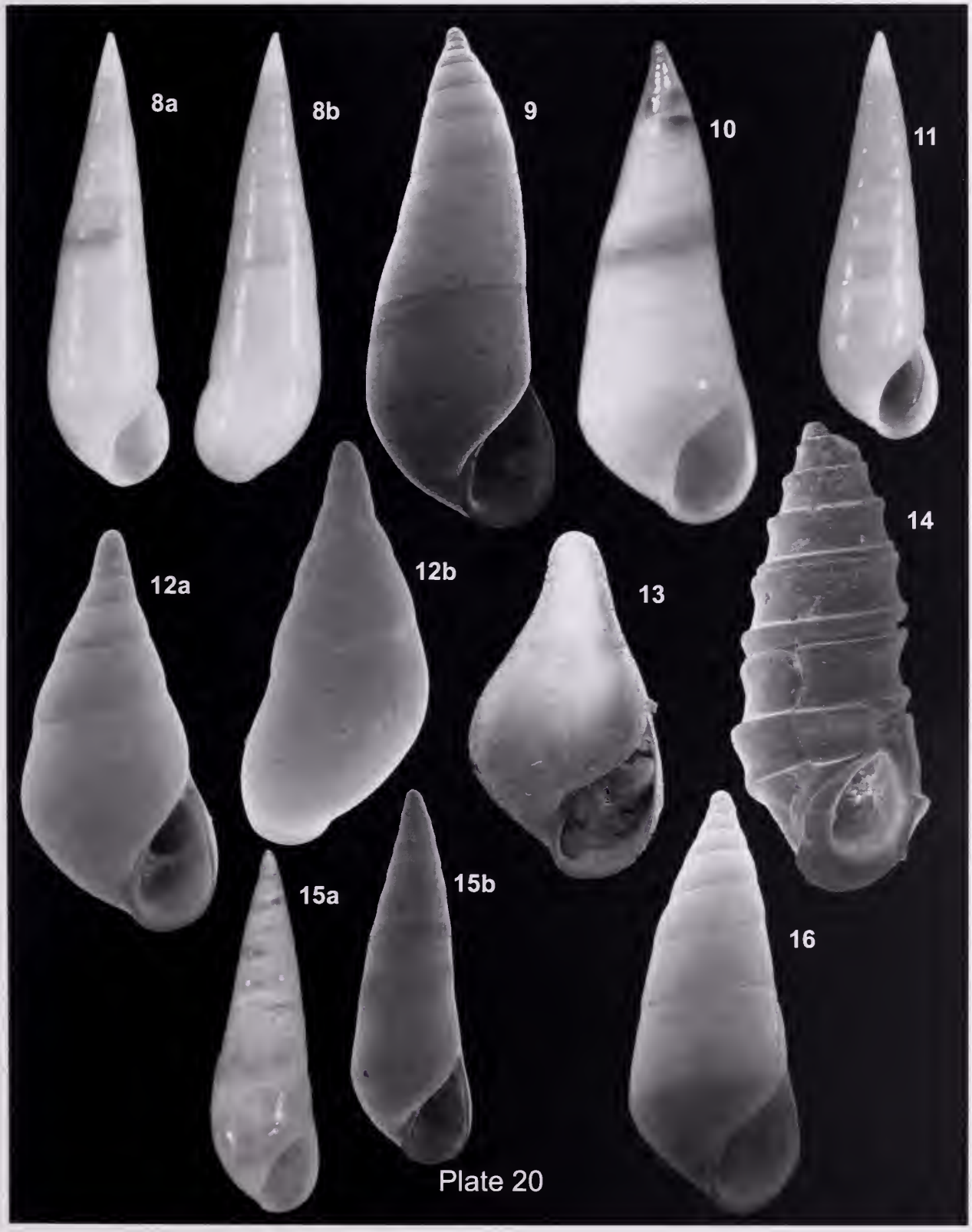
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Plate 20

Plate 21

Figures 1a, 1b *Hipponix antiquatus panamensis* C.B. Adams, 1852.
Île Clipperton, (10°17'46"N, 109°12'00"W), live, turnable dead coral in sand, 8-14 m (26-46 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-32-94), diving from M/V *Royal Star*, 25 Apr. 1994. KLK Coll. 200736. Size: 8.6 mm. Photographs by P. Sadeghian.

Figures 2a, 2b, 2c, 2d *Antisabia foliacea* (Quoy & Gaimard, 1835).
Île Clipperton, (10°17'13"N, 109°12'46"W), empty shell, under dead *Porites lobata*, 12-18 m (39-60 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-22-94), diving from M/V *Royal Star*, 21 Apr. 1994. KLK Coll. 200738. Size: 7.1 mm. Photographs by P. Sadeghian.

Figures 3a, 3d Hipponicidae sp. 1.
Île Clipperton, (10°17'39"N, 109°12'01"W), empty shell, from dead coral shakings, 9-14 m (30-46 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-36-94), diving from M/V *Royal Star*, 26 Apr. 1994. KLK Coll. 200746. Size: 6.0 mm. Photographs by P. Sadeghian.

Figures 3b, 3c Hipponicidae sp. 1.
Size: Figure 3b, 6.48 mm, Figure 3c, 0.7 mm. (SEMs by D.L. Geiger).

Figures 4a, 4b *Pilosabia pilosa* (Deshayes, 1832).
Île Clipperton, (10°18.294'N, 109°12.009'W), beach deposit, north shore, high intertidal, H_2O 83°F, leg. K.L. Kaiser (ICF-003-05), Jean-Louis Etienne Expedition, 18 Jan. 2005. KLK Coll. 210007. Size: 11.7 mm. Photographs by P. Sadeghian.

Figure 5 *Pilosabia pilosa* (Deshayes, 1832).
Île Clipperton, (10°19'08"N, 109°13'10"W), empty juvenile shell, shakings. Photograph by P. Sadeghian.

Figure 6 *Crepidula* sp. 1.
Île Clipperton, (10°19'08"N, 109°13'10"W) N side, live, shakings of dead coral, 12-29 m (40-95 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-16-98), diving from R/V *Urracá*, 30 Apr. 1998. KLK Coll. 200749. Size: 2.0 mm (SEM by D.L. Geiger). Juvenile animal showing in aperture.

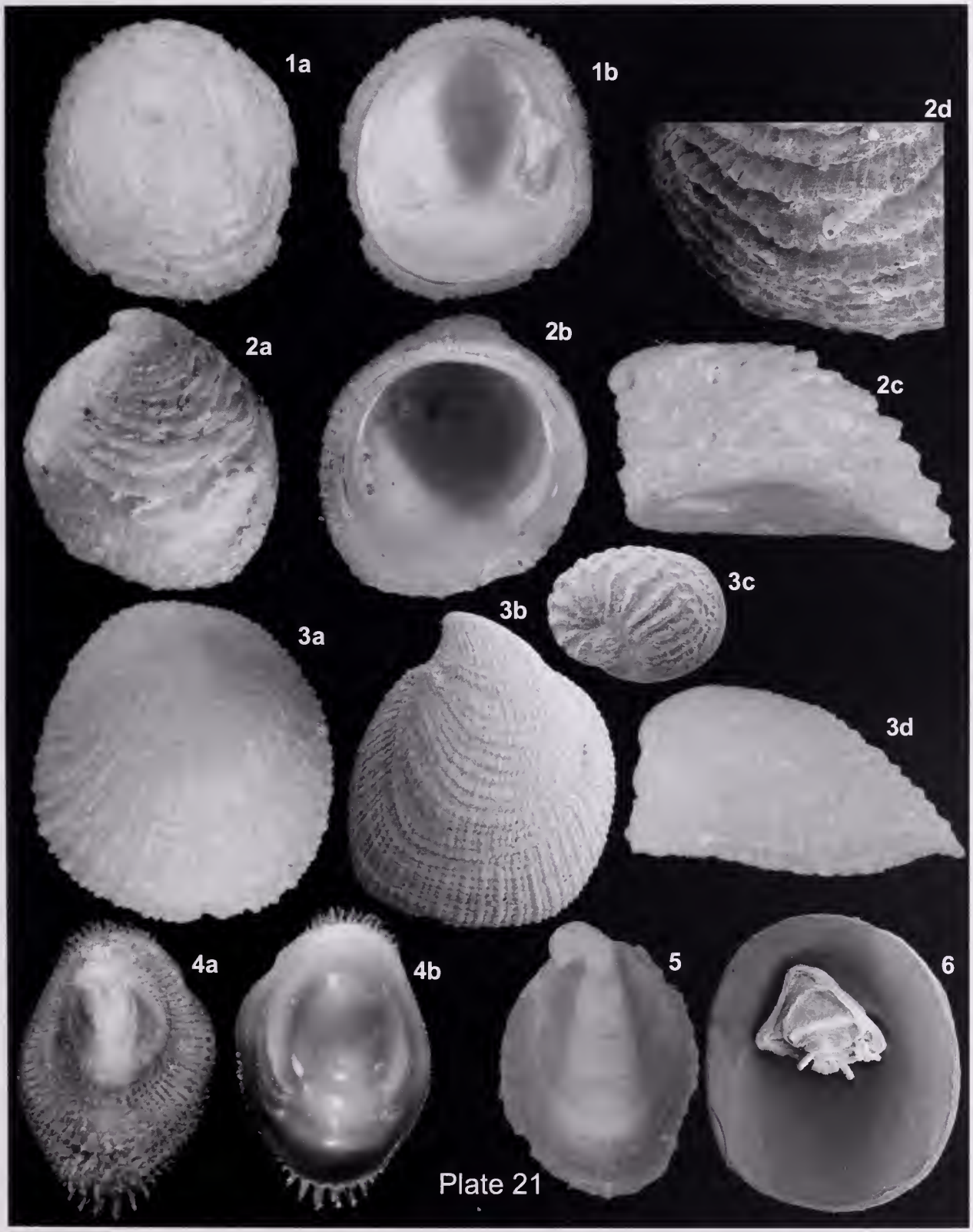
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Plate 21

Plate 22

Figure 1 *Atlanta fusca* Souleyet, 1852.
Île Clipperton, (10°19'18"N, 109°13'43"W) NW corner, empty shell, shakings of dead coral, 12-30 m (40-100 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-7-98), diving from R/V *Urracá*, 16 Apr. 1998. KLK Coll. 200754. Size: w. 0.75 mm, h. 0.55 mm (SEM by D.L. Geiger). Debris showing in aperture.

Figures 2a, 2b *Atlanta* cf. *gaudichaudi* Souleyet, 1852.
Île Clipperton, (10°17'29"N, 109°13'30"W), empty shell, steep slope of *Pocillopora* spp., shakings, 12-43 m (40-141ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-7-94), diving from M/V *Royal Star*, 16 Apr. 1994. KLK Coll. 200753. Size: 1.50 mm, protoconch 1.24 mm (SEMs by D.L. Geiger).

Figure 3 *Atlanta* cf. *inflata* Souleyet, 1852.
Île Clipperton, (10°17'29"N, 109°13'32"W), S end landing site, empty shell, dead coral heads, shakings, 9-27 m (30-90 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-3-98), diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 200750. Size: 0.35 mm (SEM by D.L. Geiger). Debris showing in aperture.

Figure 4 *Oxygyrus keraudrenii* (Lesueur, 1817).
Île Clipperton, (10°17'29"N, 109°13'32"W) S end landing site, empty shell (bellerophina stage), under dead coral in sand, shakings, 9-27 m (30-90 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-3-98), diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 200751. Size: w. 0.50 mm, h. 0.48 mm (SEM by D.L. Geiger). Debris showing in aperture.

Figures 5a, 5b, 5c *Pterosoma* cf. *planum* (Lesson, 1827).
Île Clipperton, (10°18'56"N, 109°12'52"W), empty larval shell, turnable dead coral, 11-22 m (36-72 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-24-94), diving from M/V *Royal Star*, 22 Apr. 1994. KLK Coll. 200468. Size: 0.99 mm (SEMs by D.L. Geiger).

Figures 6a, 6b Carinariidae sp. 1.
Île Clipperton, (10°17'17"N, 109°12'01"W), empty larval shell, dead *Porites* sp., shakings, 15 m (50 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-15-94), diving from M/V *Royal Star*, 19 Apr. 1994. KLK Coll. 200466. Size: 0.72 mm (SEMs by D.L. Geiger).

Figures 7a, 7b, 7c *Firoloida desmaresti* Lesueur, 1817.
Île Clipperton, (10°17'17"N, 109°12'01"W), empty larval shell, dead *Porites* sp., shakings, 15 m (50 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-15-94), diving from M/V *Royal Star*, 19 Apr. 1994. KLK Coll. 200471. Size: 0.58 mm, protoconch 0.20 mm (SEMs by D.L. Geiger).

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Plate 22

Plate 23

Figures 1a, 1b *Polinices simiae* (Deshayes *in* Deshayes & Edwards, 1838).
Île Clipperton, (10°18.166'N, 109°11.542'W) N end, empty shell, under dead coral head, 15 m (50 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-1-98), diving from R/V *Urracá*, 22 Apr. 1998. KLK Coll. 200758. Size: 11.2 mm. Photographs by P. Sadeghian.

Figure 2 Naticidae sp. 1.
Île Clipperton, (10°19'07"N, 109°13'55"W), live, sand pockets w/ rubble and *Porites* spp., 12-19 m (40-62 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-7-94), diving from M/V *Royal Star*, 17 Apr. 1994. KLK Coll. 200756. Size: 2.8 mm (SEM by D.L. Geiger). Operculum showing in aperture.

Figure 3 cf. Naticidae sp. 2.
Île Clipperton, (10°19'18"N, 109°13'43"W) NW corner, empty shell, shakings of dead coral, 12-30 m (40-100 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-7-98), diving from R/V *Urracá*, 16 Apr. 1998. KLK Coll. 200757. Size: 0.94 mm (SEM by D.L. Geiger). Bryozoa sp. and other debris showing in aperture.

Figure 4 cf. Naticidae sp. 3.
Île Clipperton, (10°18'41"N, 109°12'34"W), empty shell, steep slope of *Pocillopora* spp., shakings, 12-29 m (40-95 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-8-94), diving from M/V *Royal Star*, 16 Apr. 1994. KLK Coll. 200755. Size: 0.90 mm (SEM by D.L. Geiger). Debris showing in aperture.

Figures 5a, 5b, 5c *Trivia cherobia* (Cate, 1979).
Île Clipperton, (10°19'13"N, 109°14'06"W) NW corner, live, tangle net, sand with coralline algae (lithothamnion nodules, 4-10 cm), 63 m (206 ft), leg. K.L. Kaiser (ICF-2-98), R/V *Urracá*, 4 May 1998. KLK Coll. 200759. Size: 6.7 mm. Photographs by P. Sadeghian.

Plate 23

Plate 24

Figures 1a, 1b *Monetaria caputserpentis caputserpentis* (Linneaus, 1758).
Île Clipperton, (10°17'16"N, 109°12'45"W) SE corner, worn beach deposit, leg. K.L. Kaiser (ICF-12-98), R/V *Urracá*, 28 Apr. 1998. KLK Coll. 200793. Size: 35.5 mm. Specimen decorticated. Photographs by P. Sadeghian.

Figures 2a, 2b *Monetaria caputserpentis caputserpentis* (Linneaus, 1758).
Isla del Coco, Costa Rica, Bahía Wafer, live, on underside of rock, upper intertidal (low tide), leg. K.L. Kaiser, M/S *Victoria af Carlstad*, 27 April 1986. KLK Coll. Size: 34.1 mm. Photographs by P. Sadeghian.

Figures 3a, 3b *Monetaria moneta* (Linneaus, 1758).
Île Clipperton, (10°17'16"N, 109°12'45"W) SE corner, worn beach deposit, intertidal, PM low tide, leg. K.L. Kaiser (ICF-12-98), R/V *Urracá*, 28 Apr. 1998. KLK Coll. 200813. Size: 29.5 mm. Specimen quite worn. Photographs by P. Sadeghian.

Figures 4a, 4b *Monetaria moneta* Linneaus, 1758).
Isla del Coco, Costa Rica, Bahía Chatham, live, on underside of rock, intertidal (low tide), leg. K.L. Kaiser, M/S *Victoria af Carlstad*, 20 May 1985. KLK Coll. Size: 28.0 mm. Photographs by P. Sadeghian.

Figures 5a, 5b *Erosaria helvola helvola* (Linnaeus, 1758).
Île Clipperton, (10°17.282'N, 109°12.025'W) SE corner, SCUBA, 10-20 m (33-66 ft), reef slopes, dead coral rubble, H_2O 83-84°F, leg. H.W. Chaney, diving from M/V *Royal Star*, 17-26 Apr.1994. SBMNH 353521. Size: 26.4 mm. Specimen quite worn. Photographs by P. Sadeghian.

Figures 6a, 6b *Erosaria helvola helvola* (Linnaeus, 1758).
Marshall Islands, Enewetok lagoon, 1-3 m (3-10 ft), sand and rubble, April 1967. SBMNH 5055. Size: 25.6 mm. Photographs by P. Sadeghian.

Figures 7a, 7b *Erosaria albnginosa* (Gray, 1825).
Île Clipperton, (10°19'03"N, 109°13'59"W) W-NW side, live, underside of dead coral head, 15-18 m (50-58 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-8-98), diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 200791. Size: 24.4 mm. Photographs by P. Sadeghian.

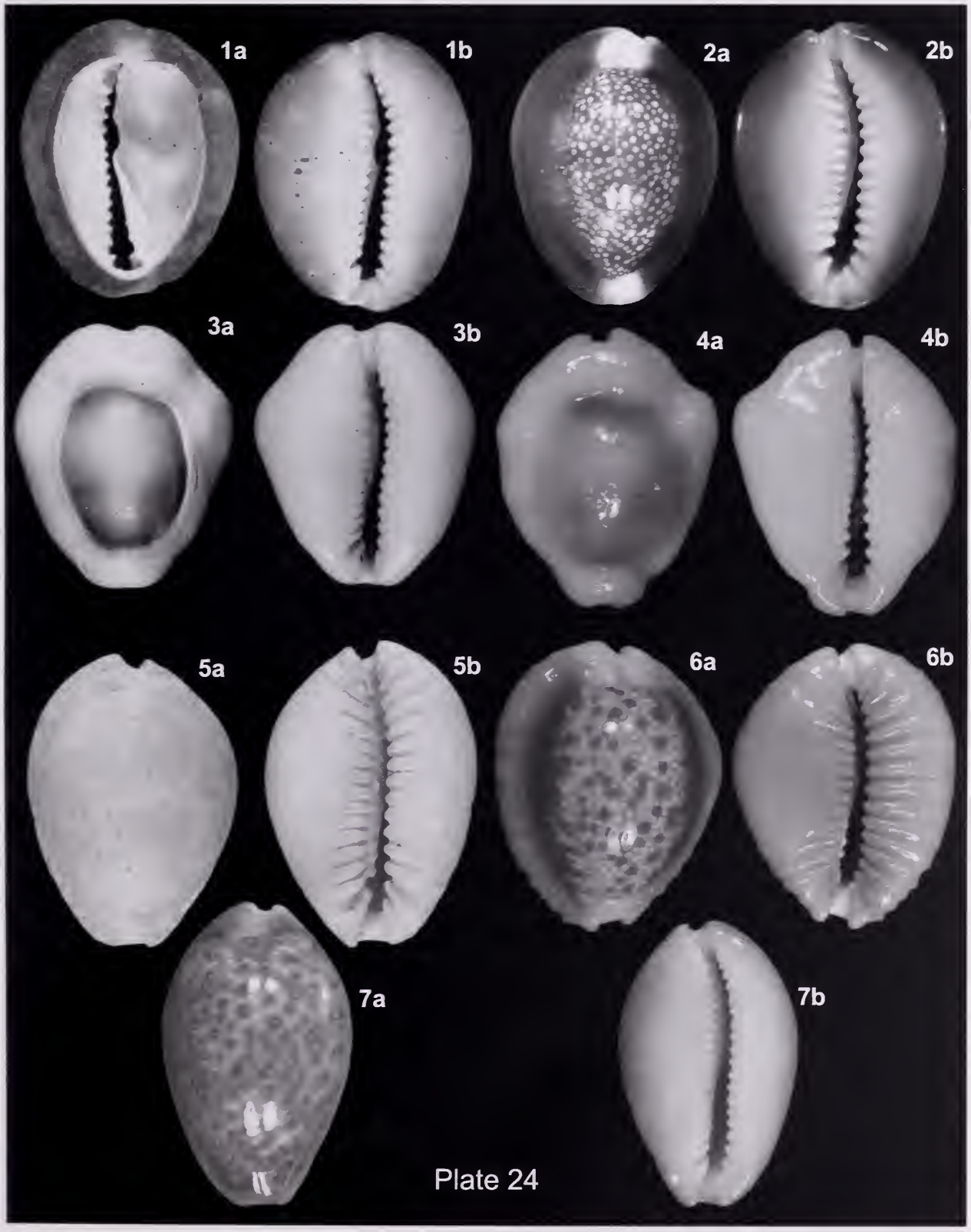
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Plate 24

Plate 25

Figures 1a, 1b *Mauritia depressa* (Gray, 1842).
Île Clipperton, (10°18'00"N, 109°13'00"W) SE corner, beach drift, intertidal, leg. K.L. Kaiser (ICF-009-05), Jean-Louis Etienne Expedition, 21 Jan. 2005. KLK Coll. 210026. Size: 41.1 mm. Photographs by P. Sadeghian.

Figures 2a. 2b *Mauritia depressa* (Gray, 1824).
Marshall Islands, Majuro, 1-2 m (3-6 ft) underside of coral slab, June 1976. SBMNH 54044. Size: 38 mm. Photographs by P. Sadeghian.

Figures 3a, 3b *Mauritia scurra* (Gmelin, 1791).
Île Clipperton, (10°17'45"N, 109°13'54"W) S-SW end, live, underside of dead coral head, 18 m (60 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-20-98), diving from R/V *Urracá*, 03 May 1998. KLK Coll. 200808. Size record: 60.9 mm. Photographs by P. Sadeghian.

Figures 4a, 4b *Luria isabellamexicana* (Stearns, 1893).
Île Clipperton, (10°17'10"N, 109°13'15"W), live, on underside of dead *Pocillopora* sp., 11-17 m (33-56 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-4-94), M/V *Royal Star*, 23 Apr. 1994. KLK Coll. 200798. Size: 43.2 mm. Photographs by P. Sadeghian.

Figures 5a, 5b *Talostolida pellucens* (Melville, 1888).
Île Clipperton, (10°18'53"N, 109°12'22"W), live, underside of turnable dead coral head, 11-16 m (36-52 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-27-94), diving from M/V *Royal Star*, 23 Apr. 1994. KLK Coll. 200769. Size: 36.0 mm. Photographs by P. Sadeghian.

Figures 6a, 6b *Talostolida pellucens* (Melville, 1888).
Île Clipperton, (10°19'18"N, 109°13'43"W) NW corner, live, on underside of dead coral, 12-30 m (40-100 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-7-98), diving from R/V *Urracá*, 25 Apr. 1998. KLK Coll. 200779. Size: 20.9 mm. Photographs by P. Sadeghian.

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Plate 26

Figure 1 *Cypraecassis coarctata* Sowerby, 1825.
Île Clipperton, (10°17'09"N, 109°14'00"W) SW side, worn beach deposit, high tidal zone, beach rubble, leg. H.W. Chaney, M/V *Royal Star*, 17 Apr. 1994. SBMNH 353701. Size: 78.5 mm. Photograph by P. Sadeghian.

Figures 2a, 2b *Cypraecassis tenuis* (Wood, 1828).
Île Clipperton, (10°18'56"N, 109°12'52"W), empty shell, turnable dead coral, 22 m (72 ft), H_2O 83°F, leg. C. Waters (ICF-24-94), diving from M/V *Royal Star*, 22 Apr. 1994. KLK Coll. 201398. Size: 118.4 mm. Photographs by P. Sadeghian.

Figures 3a, 3b *Cymatium macrodon* (Valenciennes, 1832).
Île Clipperton, (10°17'45"N, 109°13'54"W) S-SW end, live, on underside of dead coral head, 35 m (114 ft), H_2O 84°F, leg. K.L. Kaiser, diving from R/V *Urracá*, 03 May 1998. KLK Coll. 200819. Size: 57.1 mm. Photographs by P. Sadeghian.

Figures 4a, 4b *Cymatium nicobaricum* (Röding, 1798).
Île Clipperton, (10°18'00"N, 109°12'00"W), empty shell, H_2O 83-84°F, leg. M. Small, diving from M/V *Royal Star*, April 1994, Michael Small Collection. Size: 75.8 mm. Photographs by P. Sadeghian.

Figures 5a, 5b *Bursa asperrima* (Dunker, 1862).
Île Clipperton, (10°18'56"N, 109°12'52"W), live, on underside of dead *Porites* sp., 11-22 m (36-72 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-24-94), diving from M/V *Royal Star*, 22 Apr. 1994. KLK Coll. 200831. Size: 42.2 mm. Photographs by P. Sadeghian.

Figures 6a, 6b *Bursa corrugata corrugata* (Perry, 1811).
Île Clipperton, (10°17'28"N, 109°12'02"W) SE side, empty shell, SCUBA, 10-20 m (33-66 ft), reef slopes, dead coral rubble, H_2O 83-84°F, leg. H.W. Chaney, diving from M/V *Royal Star*, 17-26 Apr. 1994. SBMNH 353417. Size: 18.4 mm. Photographs by P. Sadeghian.

Figures 7a, 7b *Bursa granularis* (Röding, 1798).
Île Clipperton, (10°17'41"N, 109°12'02"W) E side, empty shell, under dead coral head, 14-27 m (45-90 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-17-98), diving from R/V *Urracá*, 02 May 1998. KLK Coll. 200839. Size: 69.0 mm. Photographs by P. Sadeghian.

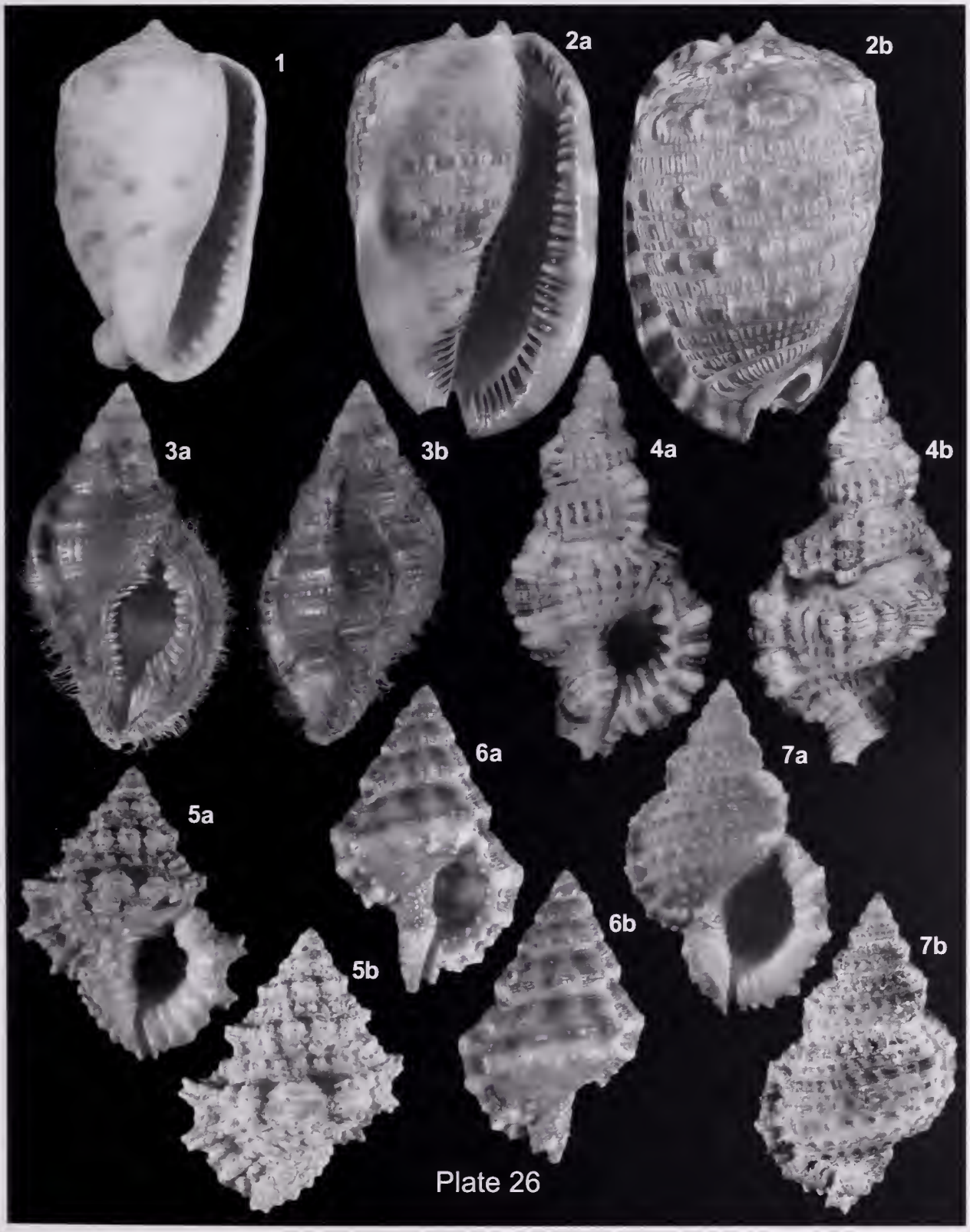
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Plate 27

Figures 1a, 1b *Cerithiopsis* cf. *eiseni* Strong & Hertlein, 1939.
Île Clipperton, (10°18'17"N, 109°11'52"W), empty shells, dead *Pocillopora* sp. shakings, 12-15 m (39-49 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-12-94), diving from M/V *Royal Star*, 18 Apr. 1994. KLK Coll. 200856. Size: 1.97 mm (SEMs by D.L. Geiger).

Figures 2a, 2b *Cerithiopsis oaxacana* Hertlein & Strong, 1951.
Île Clipperton, (10°19'05"N, 109°13'02"W), live, dead coral shakings, 9-16 m (30-52 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-34-94), diving from M/V *Royal Star*, 25 Apr. 1994. KLK Coll. 200859. Size: 2.83 mm (SEMs by D.L. Geiger).

Figures 3a, 3b cf. *Joculator* sp. 1.
Île Clipperton, (10°19.219'N, 109°13.394'W) W side, empty shell, dead coral shakings, SCUBA, 30 m (98 ft), H_2O 80-82°F, leg. K.L. Kaiser (ICF-006-05), Jean-Louis Etienne Expedition, 19 Jan. 2005. KLK Coll. 210211. Size: 1.9 mm (SEMs by D.L. Geiger).

Figures 4a, 4b *Triphora dalli* Bartsch, 1907.
Île Clipperton, (10°17'29"N, 109°13'30"W), live, steep slope of *Pocillopora* spp., shakings, 12-43 m (40-141 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-7-94), diving from M/V *Royal Star*, 16 Apr. 1994. KLK Coll. 200873. Size: 8.4 mm. Photographs by P. Sadeghian.

Figure 4c *Triphora dalli* Bartsch, 1907. (protoconch)
Île Clipperton, (10°18'08"N, 109°14'06"W), live, steep slope of *Pocillopora* spp., shakings, 12-15 m (40-49 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-21-94), diving from M/V *Royal Star*, 20 Apr. 1994. KLK Coll. 200871. Size: protoconch w. 367 µm, h. 550 µm (SEM by D.L. Geiger).

Figures 5a, 5b *Triphora* sp. 1.
Île Clipperton, (10°19'08"N, 109°13'10"W) N side, live, dead coral shakings, 12-29 m (40-95 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-16-98), diving from R/V *Urracá*, 30 Apr. 1998. KLK Coll. 200877. Size: 3.08 mm, protoconch w. 390 µm, h. 621 µm (SEMs by D.L. Geiger). Debris showing in aperture.

Figures 6a, 6b *Triphora* sp. 2.
Île Clipperton, (10°19'08"N, 109°13'10"W) N side, live, dead coral shakings, 12-29 m (40-95 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-16-98), diving from R/V *Urracá*, 30 Apr. 1998. KLK Coll. 200878. Size: 3.12 mm, protoconch w. 413 µm, h. 702 µm (SEMs by D.L. Geiger).

Figure 7 *Triphora* sp. 3.
Île Clipperton, (10°19'13"N, 109°14'06"W) NW corner, fragment, tangle net, sand and coralline algae (lithothamnion nodules, 4-10 cm), 62 m (206 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-2-98), R/V *Urracá*, 4 May 1998. KLK Coll. 200879. Size: 1.83 mm, protoconch h. 590 µm, w. 403 µm (SEM by D.L. Geiger).

Figure 8 Triphoridae sp. 1.
Île Clipperton, (10°19.219'N, 109°13.394'W) W side, empty shell, dead coral and sand, SCUBA, 55 m (180 ft), suction, H_2O 80-82°F, leg. K.L. Kaiser (ICF-007-05), Jean-Louis Etienne Expedition, 20 Jan. 2005. KLK Coll. 210415. Size: 4.8 mm (SEM by D.L. Geiger). Protoconch sculpture is erroded.

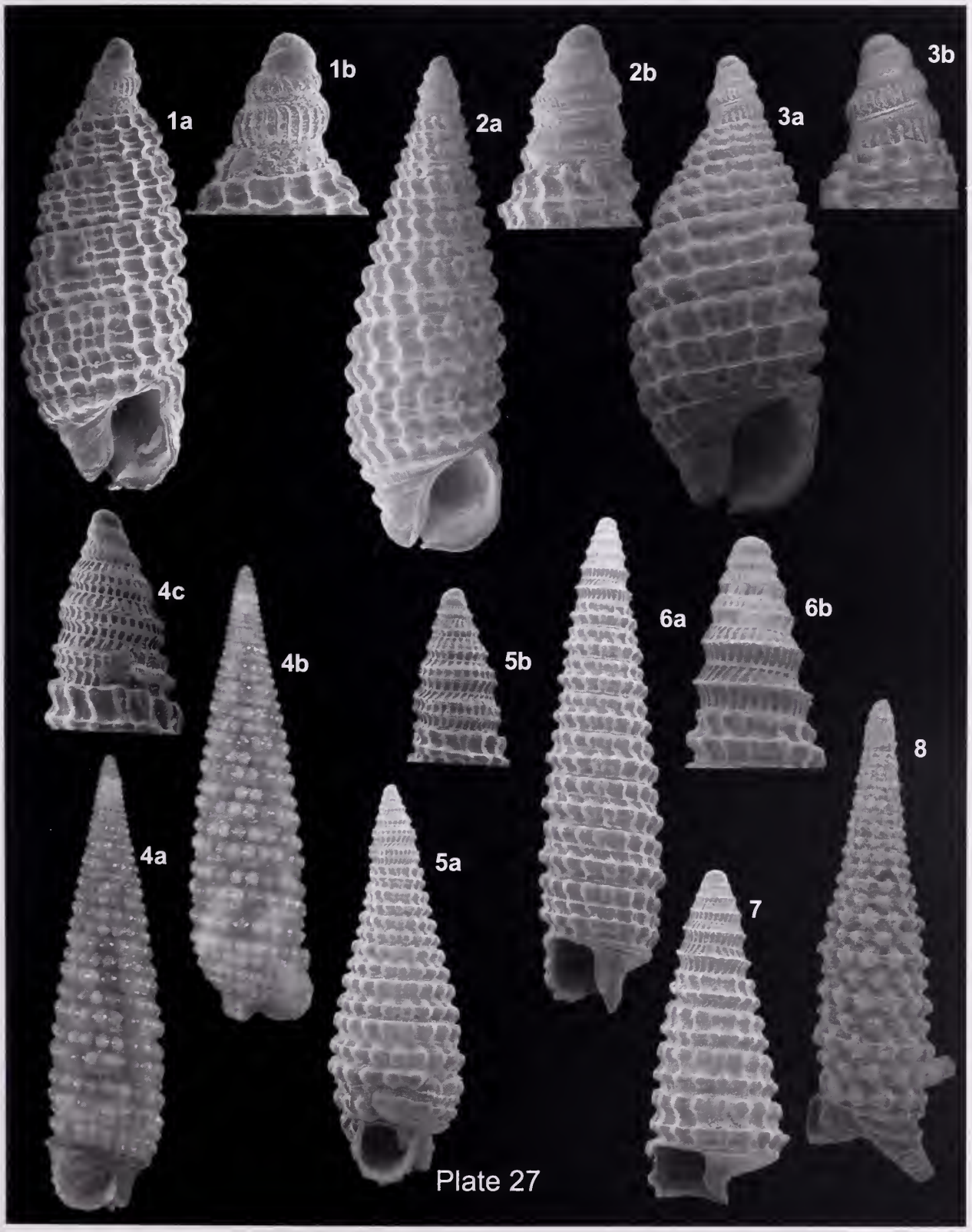
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Plate 28

Figures 1a, 1b *Hexaplex princeps* (Broderip, 1833).
Île Clipperton, (10°18'56"N, 109°12'52"W), empty shell, among turnable dead coral and rocks, 11-23 m (36-75 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-25-94), diving from M/V *Royal Star*, 22 Apr. 1994. KLK Coll. 200880. Size: 26.3 mm. Photographs by P. Sadeghian.

Figures 2a, 2b *Pterynotus tripterus* (Born, 1778).
Île Clipperton, (10°19'05"N, 109°13'02"W), empty shell, under turnable dead coral in sand, 9-16 m (29-52 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-34-94), diving from M/V *Royal Star*, 25 Apr. 1994. KLK Coll. 200882. Size: 36.0 mm. Photographs by P. Sadeghian.

Figures 3a, 3b *Attiliosa nodulosa* (A. Adams, 1855).
Île Clipperton, (10°17'29"N, 109°13'30"W), empty shell, steep slope of *Pocillopora* spp., 12-43 m (40-141 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-7-94), diving from M/V *Royal Star*, 16 Apr. 1994. KLK Coll. 200883. Size: 7.8 mm. Photographs by P. Sadeghian.

Figure 4 *Attiliosa* sp. 1.
Île Clipperton, (10°18.757'N, 109°12.029'W) NE side, empty shell, turnable dead coral in sand, SCUBA, 15-45 m (49-148 ft), H_2O 78-80°F, leg. K.L. Kaiser (ICF-019-05), Jean-Louis Etienne Expedition, 26 Jan. 2005. KLK Coll. 210218. Size: 11.8 mm. Photograph by P. Sadeghian.

Figures 5a, 5b *Favartia exigua* (Broderip, 1833).
Île Clipperton, (10°17'41"N, 109°12'02"W) E side, empty shell, under dead coral head, 27 m (90 ft), H_2O 84°F, leg. K.L. Kaiser, diving from R/V *Urracá*, 02 May 1998. KLK Coll. 200890. Size: 12.2 mm. Photographs by P. Sadeghian.

Figures 6a, 6b *Maculotriton serriale* (Deshayes, 1834).
Île Clipperton, (10°18.000'N, 109°13.000'W) SE corner, intertidal, sand and coral rubble, leg. K.L. Kaiser (ICF-009-05), Jean-Louis Etienne Expedition, 21 Jan. 2005. KLK Coll. 210015. Size: 15.4 mm. Photographs by P. Sadeghian.

Figures 7a, 7b *Pascula rufonotata* (Carpenter, 1864).
Île Clipperton, (10°18'52"N, 109°12'27"W) N-NE end, live, underside of dead coral head, 8-21 m (25-70 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-15-98), diving from R/V *Urracá*, 21 Apr. -5 May 1998. KLK Coll. 200903. Size: 12.3 mm. Photographs by P. Sadeghian.

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Plate 29

Figures 1a, 1b *Phyllocoma scalariformis* (Broderip, 1833).
Île Clipperton, (10°17'08"N, 109°13'16"W) SE side, empty shell, SCUBA, 10-20 m, reef slopes, dead coral rubble, H_2O 83-84°F, leg. H.W. Chaney, diving from M/V *Royal Star*, 15-20 Apr. 1994. SBMNH 353523. Size: 26.9 mm (decollate). Photographs by P. Sadeghian.

Figures 2a, 2b *Drupa ricinus ricinus* (Linnaeus, 1758).
Île Clipperton, (10°17'29"N, 109°13'32"W) S end landing site, live, on coral head, 9 m (30 ft), H_2O 84°F, leg. K.L. Kaiser, diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 200911. Size: 30.5 mm. Photographs by P. Sadeghian.

Figures 3a, 3b *Morula uva* (Röding, 1798).
Île Clipperton, (10°19.145'N, 109°13.130'W), live, on turnable dead coral, 12-15 m (39-49 ft), H_2O 83°F, leg. K.L. Kaiser (lCF-20-94), diving from M/V *Royal Star*, 20 Apr. 1994. KLK Coll. 200921. Size: 27.3 mm. Photographs by P. Sadeghian.

Figures 4a, 4b *Nassa serta* (Bruguière, 1789).
Île Clipperton, (10°18'21"N, 109°11'54"W) E-NE corner, live, underside of dead coral head, 21 m (70 ft), H_2O 84°F, leg. K.L. Kaiser (lCF-18-98), diving from R/V *Urracá*, 2 May 1998. KLK Coll. 200933. Size: 49.7 mm. Photographs by P. Sadeghian.

Figures 5a, 5b *Plicopurpura pansa* (Gould, 1853).
Île Clipperton, (10°17'16"N, 109°12'45"W) SE corner, live, on coral rock, intertidal, PM low tide, H_2O 84°F, leg. K.L. Kaiser (lCF-12-98), R/V *Urracá*, 28 Apr. 1998. KLK Coll. 200939. Size: 39.6 mm. Operculum showing in aperture. Photographs by P. Sadeghian.

Figures 6a, 6b *Stramonita biserialis* (Blainville, 1832).
Île Clipperton, (10°18'00"N, 109°13'00"W) SE corner, beach drift, intertidal, leg. K.L. Kaiser (lCF-009-05), Jean-Louis Etienne Expedition, 21 Jan. 2005. KLK Coll. 210027. Size: 50.6 mm. Photographs by P. Sadeghian.

Figures 7a, 7b *Tribulus planospira* (Lamarck, 1822).
Île Clipperton, (10°18'00"N, 109°14'00"W) SE corner, live, intertidal, PM low tide on dead coral rock. H_2O 84°F, leg. K.L. Kaiser, R/V *Urracá*, 28 Apr. 1998. KLK Coll. 200940. Size: 23.3 mm. Operculum showing in aperture. Photographs by P. Sadeghian.

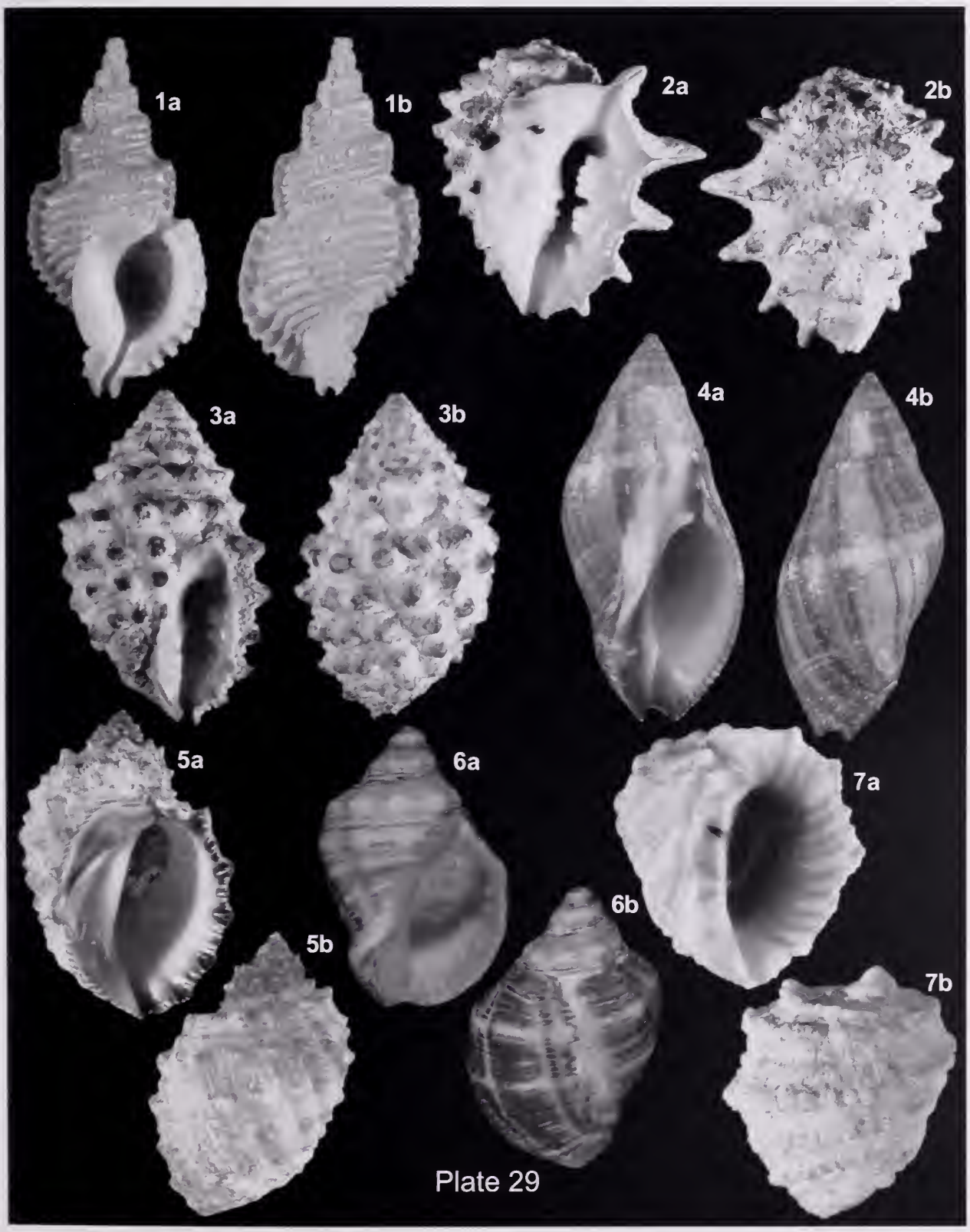
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Plate 29

Plate 30

Figure 1 *Coralliophila macleani* Shasky, 1970.
Île Clipperton, (10°19.219'N, 109°13.394'W), W side, empty shell, turnable coral rock in sand, shakings, 10-38 m (33-125 ft), H_2O 80-82°F, leg. K.L. Kaiser (ICF-006-05), Jean-Louis Etienne Expedition, 19 Jan. 2005. KLK Coll. 210238. Size: 8.0 mm. Photograph by P. Sadeghian.

Figure 2 *Coralliophila macleani* Shasky, 1970.
Île Clipperton, (10°18'41"N, 109°12'34"W), empty juvenile shell, shakings, steep slope of *Pocillopora* sp., 12-29 m (39-95 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-8-94), diving from M/V *Royal Star*, 16 Apr. 1994. KLK Coll. 200998. Size: 2.9 mm. Photograph by P. Sadeghian.

Figures 3a, 3b *Coralliophila neritoides* (Lamarck, 1816).
Île Clipperton, (10°17'39"N, 109°12'01"W), live, on coral head branches, 9-27 m (29-88 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-35-94), diving from M/V *Royal Star*, 26 Apr. 1994. KLK Coll. 200944. Size: 26.4 mm. Egg case showing in aperture. Photographs by P. Sadeghian.

Figures 4a, 4b *Coralliophila parva* (E.A. Smith, 1877).
Île Clipperton, (10°17'29"N, 109°13'32"W) S end landing site, live, under dead coral, 9-27 m (30-90 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-3-98), diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 200961. Size: 7.5 mm (SEMs by D.L. Geiger). Dried egg capsule showing in aperture.

Figures 5a, 5b *Latiaxis tosanus* Hirase, 1908.
Île Clipperton, (10°17'35"N, 109°12'01"W), E end, center, live, on underside of dead coral head, 33 m (110 ft), H_2O 84°F, leg. K.L. Kaiser, diving from R/V *Urracá*, 23 Apr. 1998. KLK Coll. 200964. Size: 20.5 mm. Photographs by P. Sadeghian.

Figure 6 *Reliquiaecava robillardi* (Liénard, 1870).
Île Clipperton, (10°17'04"N, 109°12'46"W) S-SE corner, live, in living coral sp., 12-30 m (40-100 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-6-98), diving from R/V *Urracá*, 21 Apr. – 5 May 1998. KLK Coll. 200989. Size: 13.8 mm. Photograph by P. Sadeghian.

Figure 7 *Reliquiaecava robillardi* (Liénard, 1870).
Île Clipperton, (10°17'04"N, 109°12'46"W) S-SE corner, empty shell embedded in coral, in situ, 12-30 m (40-100 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-6-98), diving from R/V *Urracá*, 21 Apr. – 5 May 1998. KLK Coll. 200989. Size: 13.3 mm. Photograph by P. Sadeghian.

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Plate 31

Figure 1 *Rhizochilus antipathum* Steenstrup, 1850.
Île Clipperton, (10°17.493'N, 109°13.538'W) S end landing site, live, attached to live *Antipathes* sp., 27 m (90 ft), leg. K.L. Kaiser, diving from R/V *Urracá*, 01 May 1998. KLK Coll. 210255. Size: 9.1 mm (upper), 6.7 mm (lower). Photograph by P. Sadeghian.

Figures 2a, 2b *Rhizochilus antipathum* Steenstrup, 1850.
Île Clipperton, (10°17.493'N, 109°13.538'W) S end landing site, live, attached to live *Antipathes* sp., 27 m (90 ft), leg. K.L. Kaiser, diving from R/V *Urracá*, 01 May 1998. KLK Coll. 210255. Size: 13.2 mm. Photographs by P. Sadeghian.

Figures 3a, 3b *Quoyula madreporarum* (Sowerby, 1834).
Île Clipperton, (10°18'06"N, 109°14'08"W), empty shell, under dead coral head, 12-15 m (40-49 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-17-94), diving from M/V *Royal Star*, 19 Apr. 1994. KLK Coll. 200969. Size: 11.7 mm. Albino specimen. Photographs by P. Sadeghian.

Figure 4 *Quoyula madreporarum* (Sowerby, 1834).
Île Clipperton, (10°18'06"N, 109°14'08"W), empty shell, under dead coral head, 12-15 m (40-49 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-17-94), diving from M/V *Royal Star*, 19 Apr. 1994. KLK Coll. 200969. Size: 8.5 mm. Photograph by P. Sadeghian.

Figure 5 *Quoyula monodonta* (Blainville, 1832).
Île Clipperton, (10°19'03"N, 109°13'59"W) NW corner, coral head shakings, 12-15 m (30-40 ft), leg. K.L. Kaiser, diving from R/V *Urracá*, 27 Apr. 1998. KLK Coll. 200980. Size: 7.0 mm. Photograph by P. Sadeghian.

Figures 6a, 6b Coralliophilinae sp. 1.
Île Clipperton, (10°17'04"N, 109°12'46"W) S-SE corner, empty shell, under dead coral head, 12-30 m (40-100 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-6-98), R/V *Urracá*, 21 Apr. 1998. KLK Coll. 200997. Size: 14.7 mm. Photographs by P. Sadeghian.

Figures 7a, 7b Coralliophilinae sp. 1.
Île Clipperton, (10°19'13"N, 109°14'06"W) NW corner, live, tangle net, sand with coralline algae, 62 m (206 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-2-98), R/V *Urracá*, 04 May 1998. KLK Coll. 200999. Size: 5.0 mm. (SEMs by D.L. Geiger).

Figure 8 Coralliophilinae sp. 2.
Île Clipperton, (10°17.044'N, 109°13.096'W) S side, live, on healthy coral in sand, NIGHT SCUBA, 18 m (60 ft), H_2O 80-82°F, leg. K. Kaiser, S. Hourdez, (ICF-015-05), Jean-Louis Etienne Expedition, 23 Jan. 2005. KLK Coll. 210249. Size: 8.1 mm Photograph by P. Sadeghian.

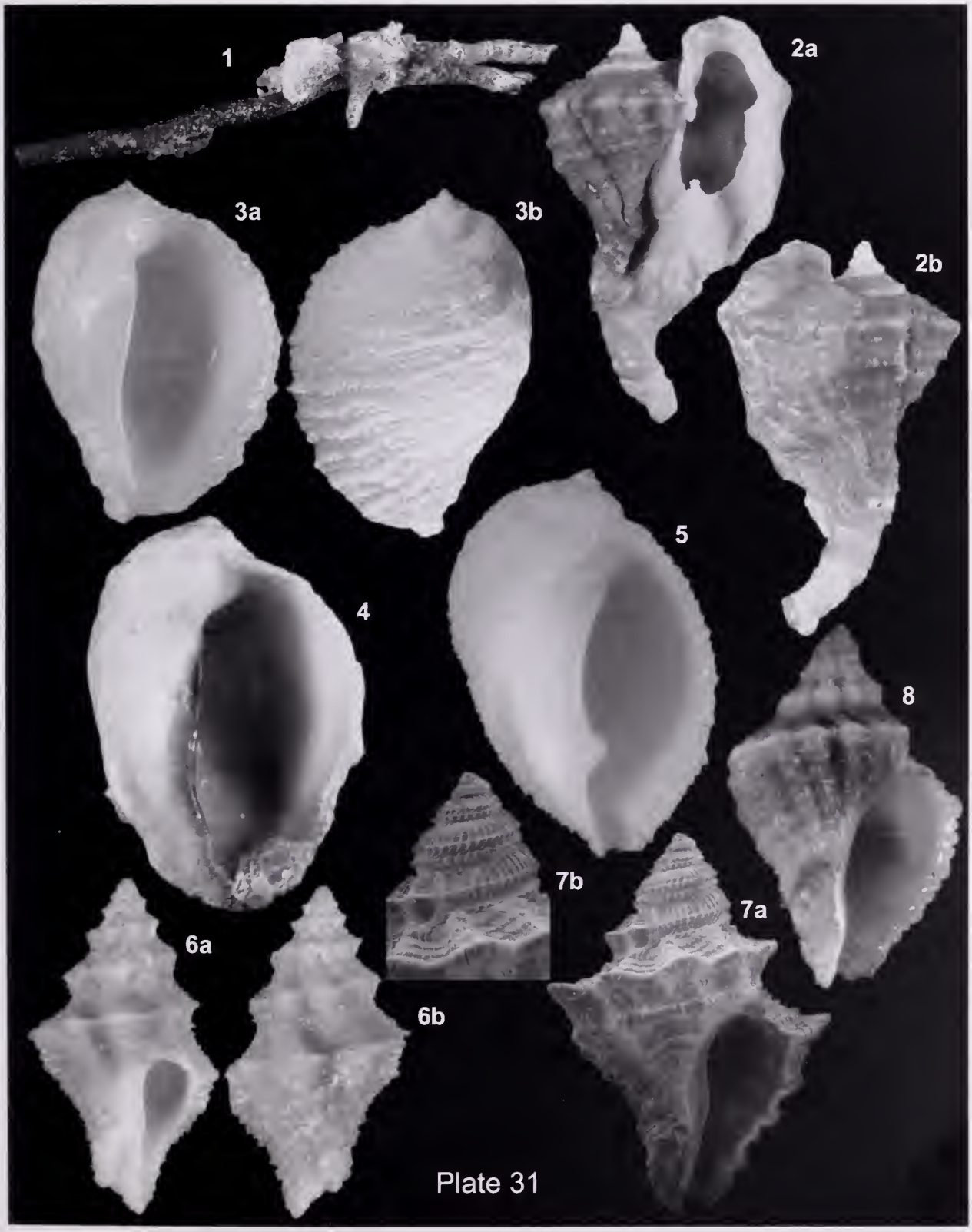
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Plate 32

Figures 1a, 1b *Clivipollia fragarius* (Wood, 1828).
Île Clipperton, (10°18'58"N, 109°13'02"W) N side, live, undersides of dead coral head, 9-30 m (30-99 ft), leg. K.L. Kaiser (ICF-14-98), diving from R/V *Urracá*, 29 Apr. 1998. KLK Coll. 201013. Size: 23.1 mm. Photographs by P. Sadeghian.

Figures 2a, 2b *Colubraria ochsneri* Hertlein & Allison, 1968.
Île Clipperton, (10°17'29"N, 109°13'30"W), live, steep slope under *Pocillopora* sp., 12-43 m (40-141ft), H_2O 83°F, leg. K.L. Kaiser (ICF-7-94), diving from M/V *Royal Star*, 16 Apr. 1994. KLK Coll. 201024. Size: 26.5 mm. Photographs by P. Sadeghian.

Figures 3a, 3b *Colubraria ochsneri* Hertlein & Allison, 1968.
Île Clipperton, (10°19.219'N, 109°13.394'W) SW side, empty shell, turnable dead coral in sand, SCUBA, suction, 33 m (108 ft), H_2O 80°F, leg. Bouchard, Albenga, Dugrais (ICF-007-05), Jean-Louis Etienne Expedition, 20 Jan. 2005. KLK Coll. 210271. Size: 2.9 mm (SEMs by D.L. Geiger).

Figures 4a, 4b *Colubraria* cf. *lucasensis* Strong & Hertlein, 1937.
Île Clipperton, (10°19.219'N, 109°13.394'W) SW side, empty shell, turnable dead coral in sand, SCUBA, suction, 55 m (180 ft), H_2O 80°F, leg. Bouchard, Albenga, Dugrais (ICF-007-05), Jean-Louis Etienne Expedition, 20 Jan. 2005. KLK Coll. 210279. Size: 2.6 mm (SEMs by D.L. Geiger).

Figures 5a, 5b *Mitrella* sp. 1.
Île Clipperton, (10°17'13"N, 109°12'46"W), ?live, from shakings of dead *Porites lobata*, 12-18 m (39-60 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-22-94), diving from M/V *Royal Star*, 21 Apr. 1994. KLK Coll. 201048. Size: 3.3 mm. Photographs by P. Sadeghian.

Figures 6a, 6b *Mitrella* sp. 1.
Île Clipperton, (10°17'29"N, 109°13'32"W) S end landing site, live, under coral head, 9-27 m (30-90 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-3-98), R/V *Urracá*, 21 Apr. 1998. KLK Coll. 201046. Size: 3.84 mm (SEMs by D.L. Geiger).

Figures 7a, 7b *Mitrella* sp. 2.
Île Clipperton, (10°19.01'N, 109°13.76'W) SW side, empty shell, turnable dead coral in sand, SCUBA, suction, 17 m (56 ft),H_2O 80-82°F, leg. Bouchard, Albenga (ICF-038JLE-05), Jean-Louis Etienne Expedition, 28 Jan. 2005. KLK Coll. 210290. Size: 2.8 mm (SEMs by D.L. Geiger).

Figure 8a, 8b *Mitrella* sp. 3.
Île Clipperton, (10°19.219'N, 109°13.394'W) W side, empty shell, turnable dead coral in sand, SCUBA, shakings, 10-38 m (33-124 ft), H_2O 80-82°F, leg. K.L. Kaiser (ICF-006-05), Jean-Louis Etienne Expedition, 19 Jan. 2005. KLK Coll. 210291. Size: 3.1 mm. Fragment. Photographs by P. Sadeghian.

Figure 9 *Sincola gibberula* (Sowerby, 1832).
Île Clipperton, (10°17'09"N, 109°14'00"W), worn beach specimen, leg. W. Schneider, 18 May 2003. SBMNH 80288. Size: 13.1 mm. Photo: D.K. Mulliner. Permission to use image from *The Festivus*.

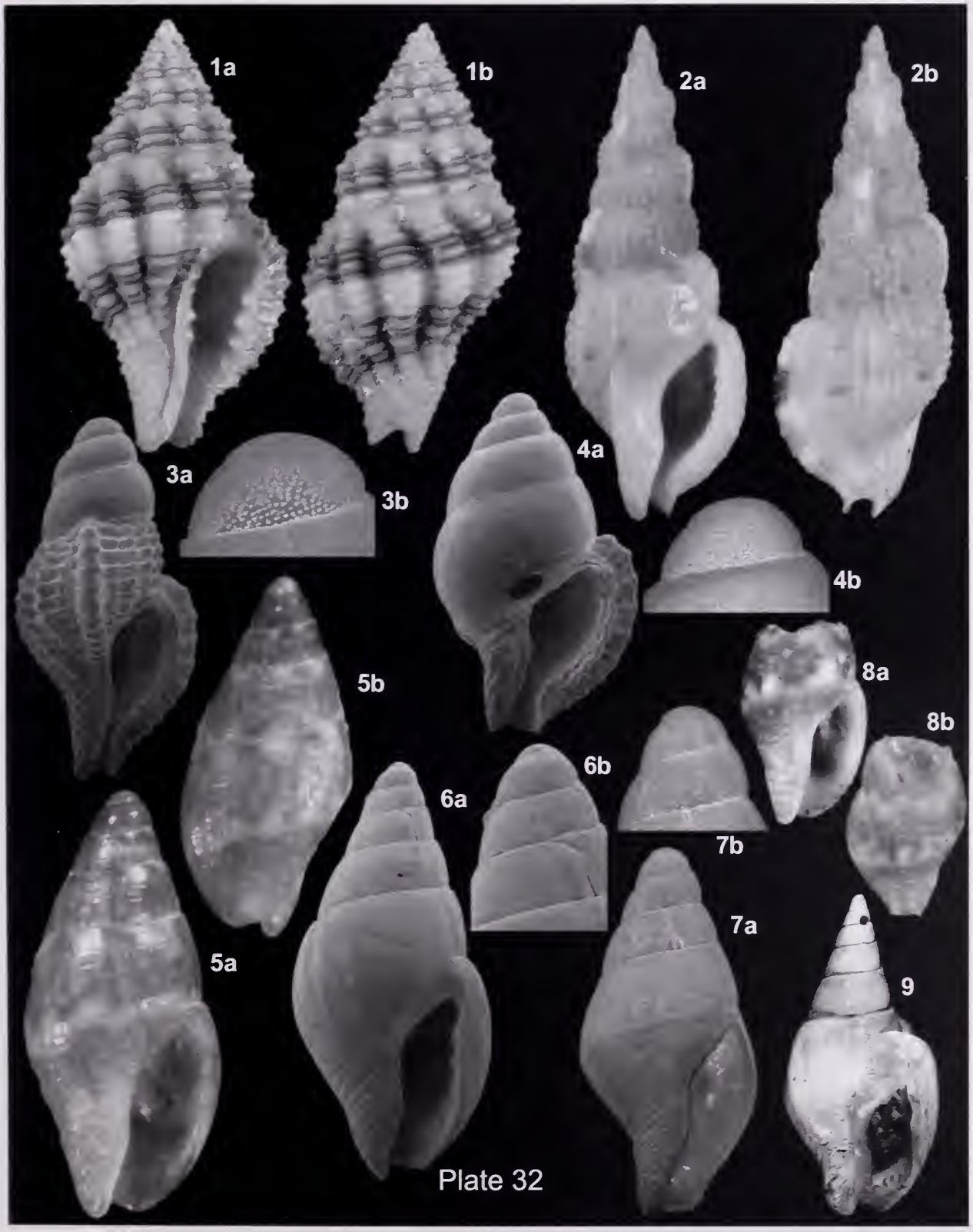
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Plate 32

Plate 33

Figures 1a, 1b *Nassarius catallus* (Dall, 1908).
Île Clipperton, (10°19.750'N,109°14.617'W), empty shell, otter trawl, 113 m (371 ft), mud and brown hydroids, H_2O 84°F (surface water temperature), leg. K.L. Kaiser, D.R. Robertson et al. (ICF-13-98), trawled from R/V *Urracá*, 28 Apr. 1998. KLK Coll. 201050. Size: 13.6 mm. Photographs by P. Sadeghian.

Figure 2 *Nassarius catallus* (Dall, 1908).
Île Clipperton, (10°19.750'N,109°14.617'W), live juvenile, otter trawl, 113 m (371 ft), mud and brown hydroids, H_2O 84°F (surface water temperature), leg. K.L. Kaiser (ICF-13-98), trawled from R/V *Urracá*, 28 Apr. 1998. KLK Coll. 201050. Size: 7.4 mm. Photograph by P. Sadeghian.

Figures 3a, 3b *Harpa gracilis* Broderip & Sowerby I, 1829.
Île Clipperton, (10°18'58"N, 109°13'02"W) N side, empty shell, under dead coral head on sand, 20 m (65 ft), H_2O 84°F, leg. K.L. Kaiser, diving from R/V *Urracá*, 29 Apr. 1998. KLK Coll. 201058. Size: 31.0 mm. Photographs by P. Sadeghian.

Figure 4 *Granula* sp. 1.
Île Clipperton, (10°17'17"N, 109°12'01"W), empty shell, large dead *Porites* sp., shakings, 15 m (49 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-15-94), diving from M/V *Royal Star*, 19 Apr. 1994. KLK Coll. 201059. Size: 0.77 mm (SEM by D.L. Geiger).

Figure 5 *Granulina* cf. *margaritula* (Carpenter, 1857).
Île Clipperton, (10°18'17"N, 109°11'52"W), live, juvenile, dead *Pocillopora* sp. shakings, 9-15 m (30-49 ft), H_2O 83°, leg. K.L. Kaiser (ICF-14-94), diving from M/V *Royal Star*, 18 Apr. 1994. KLK Coll. 201059. Size: 0.95 mm (SEM by D.L. Geiger).

Figures 6a, 6b *Mitra papalis* (Linnaeus, 1758).
Île Clipperton, (10°19'09"N, 109°13'08"W), live, under coral in sand, H_2O 83°F, leg. K.L. Kaiser, diving from M/V *Royal Star*, 20 Apr. 1994, 12 m (40 ft). KLK Coll. 201063. Size: 130.5 mm, w/ periostracum. Tip of siphon showing in aperture. Photographs by P. Sadeghian.

Figures 7a, 7b *Mitra edentula* Swainson, 1823.
Île Clipperton, (10°18.805'N, 109°12.009'W), worn beach deposit, high intertidal, leg. K.L. Kaiser (ICF-003-05), Jean-Louis Etienne Expedition, 18 Jan. 2005. KLK Coll. 210040. Size: 30.1 mm. Photographs by P. Sadeghian.

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Plate 34

Figures 1a, 1b *Mitra ferruginea* Lamarck, 1811.
Île Clipperton, (10°18'07"N, 109°14'07"W), live, coral and rubble pockets, 14-18 m (46-59 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-10-94), diving from M/V *Royal Star*, 17 Apr. 1994, KLK Coll. 201082. Size: 36.9 mm. Photographs by P. Sadeghian.

Figures 2a, 2b *Mitra rupicola* Reeve, 1844.
Île Clipperton, (10°19'13"N, 109°14'06"W) NW corner, live, tangle net, sand with coralline algae (lithothamnion nodules, 4-10 cm), 62 m (206 ft), leg. K.L. Kaiser (ICF-2-98), R/V *Urracá*, 04 May 1998. KLK Coll. 201088. Size: 30.0 mm. Photographs by P. Sadeghian.

Figure 3 Mitridae sp. 1.
Île Clipperton, (10°19.219'N, 109°13.394'W), W side, empty shell, turnable coral rock in sand, shakings, 10-38 m (33-125 ft), H_2O 80-82°F, leg. K.L. Kaiser (ICF-006-05), Jean-Louis Etienne Expedition, 19 Jan. 2005. KLK Coll. 210301. Size: 3.2 mm (SEM by D.L. Geiger).

Figures 4a, 4b Mitridae sp. 2.
Île Clipperton, (10°19.219'N, 109°13.394'W), W side, empty shell, turnable coral rock in sand, shakings, 10-38 m (33-125 ft), H_2O 80-82°F, leg. K.L. Kaiser (ICF-006-05), Jean-Louis Etienne Expedition, 19 Jan. 2005. KLK Coll. 210302. Size: 3.9 mm (SEMs by D.L. Geiger).

Figures 5a, 5b *Conus chaldaeus* (Röding, 1798).
Île Clipperton, (10°16'56"N, 109°12'53"W) S-SE end, live, under dead coral head, 11-15 m, (35-50 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-4-98), diving from R/V *Urracá*, 21 Apr.-5 May 1998. KLK Coll. 201090. Size: 31.2 mm. Photographs by P. Sadeghian.

Figures 6a, 6b *Conus diadema* Sowerby, 1834.
Île Clipperton, (10°19'18"N, 109°13'43"W) NW corner, live, under dead coral head, 12-31 m (40-100 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-7-98), diving from R/V *Urracá*, 21 Apr.-5 May 1998. KLK Coll. 201104. Size: 42.1 mm. Photographs by P. Sadeghian.

Figures 7a, 7b *Conus ebraeus* Linnaeus, 1758.
Île Clipperton, (10°18'53"N, 109°11'98"W), live, under turnable dead coral head, 9-12 m (30-40 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-28-94), diving from M/V *Royal Star*, 23 Apr. 1994. KLK Coll. 201114. Size: 39.4 mm. Photographs by P. Sadeghian.

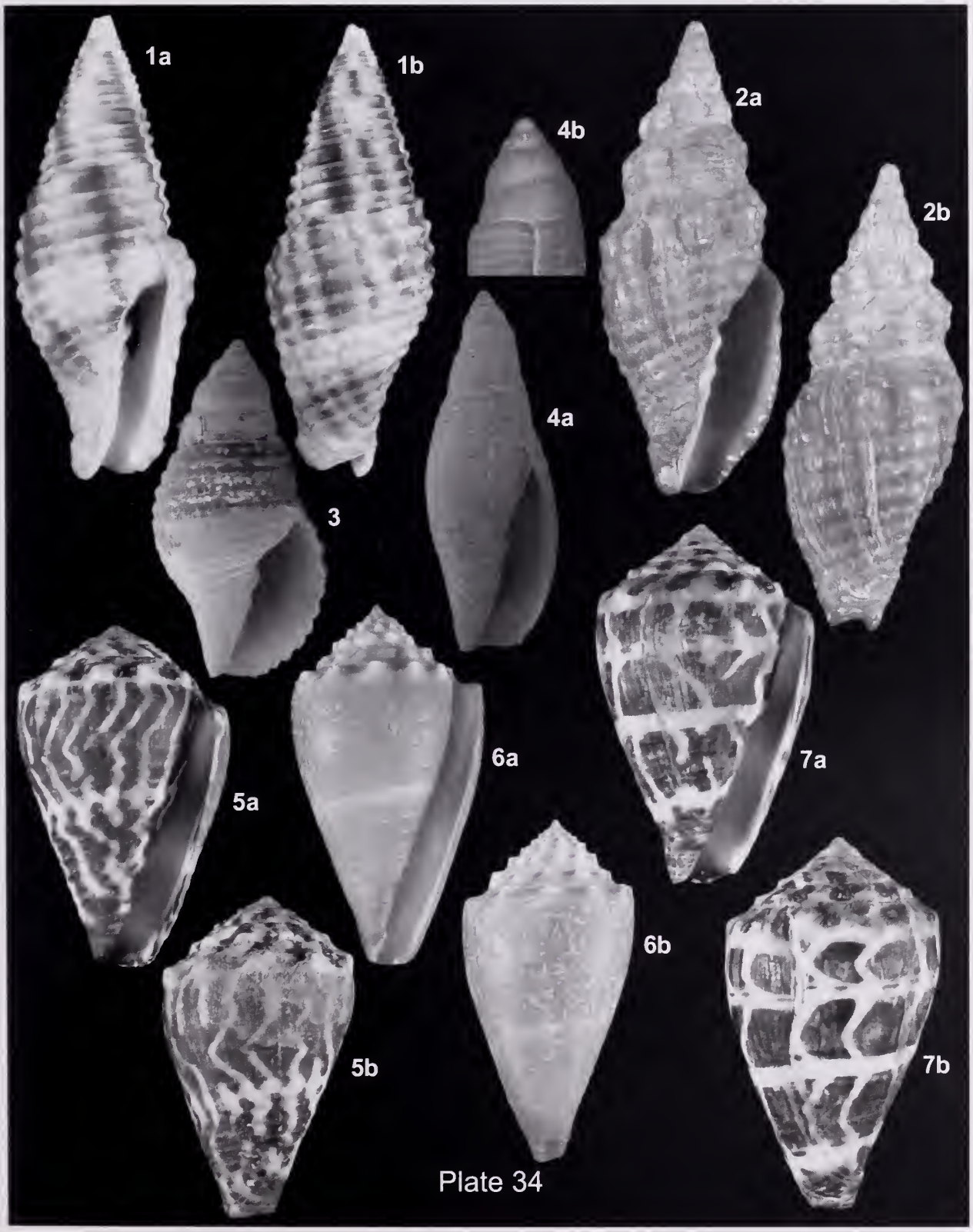

Plate 34

Plate 35

Figures 1a, 1b *Conus tiaratus* Sowerby, 1833.
Île Clipperton, (10°17'13"N, 109°12'46"W), live, under dead *Porites lobata*, 12-18 m (39-60 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-22-94), diving from M/V *Royal Star*, 21 Apr. 1994. KLK Coll. 201127. Size: 20.9 mm. Photographs by P. Sadeghian.

Figures 2a, 2b *Conus purpurascens* Sowerby, 1833.
Île Clipperton, (10°19.00'N, 109°12.00'W) N end, live, underside of dead coral head on egg mass, 11 m (36 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-1-98), diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 201138. Size: 72.8 mm. Periostracum removed. Photographs by P. Sadeghian.

Figures 3a, 3b *Conus tessulatus* Born, 1778.
Île Clipperton, (10°19'03"N, 109°13'59"W) W-NW side, empty shell, under dead coral head, 15-18 m (50-58 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-8-98), diving from R/V *Urracá*, 26 Apr. 1998. KLK Coll. 201144. Size: 40.7 mm. Photographs by P. Sadeghian.

Figures 4a, 4b *Conus nux* Broderip, 1833.
Île Clipperton, (10°18'52"N, 109°12'27"W) N-NE end, live, under dead coral head, 8 m (25 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-15-98), diving from R/V *Urracá*, 30 Apr. 1998. KLK Coll. 201145. Size: 23.5 mm. Photographs by P. Sadeghian.

Figure 5 *Terebra crenulata* (Linnaeus, 1758).
Île Clipperton, (10°19'03"N, 109°13'59"W) W-NW side, empty shell, on sand, 15-18 m (50-58 ft), H_2O 84°F, leg. K.L. Kaiser, diving from R/V *Urracá*, 25 Apr. 1998. KLK Coll. 201151. Size: 71.9 mm. Photograph by P. Sadeghian.

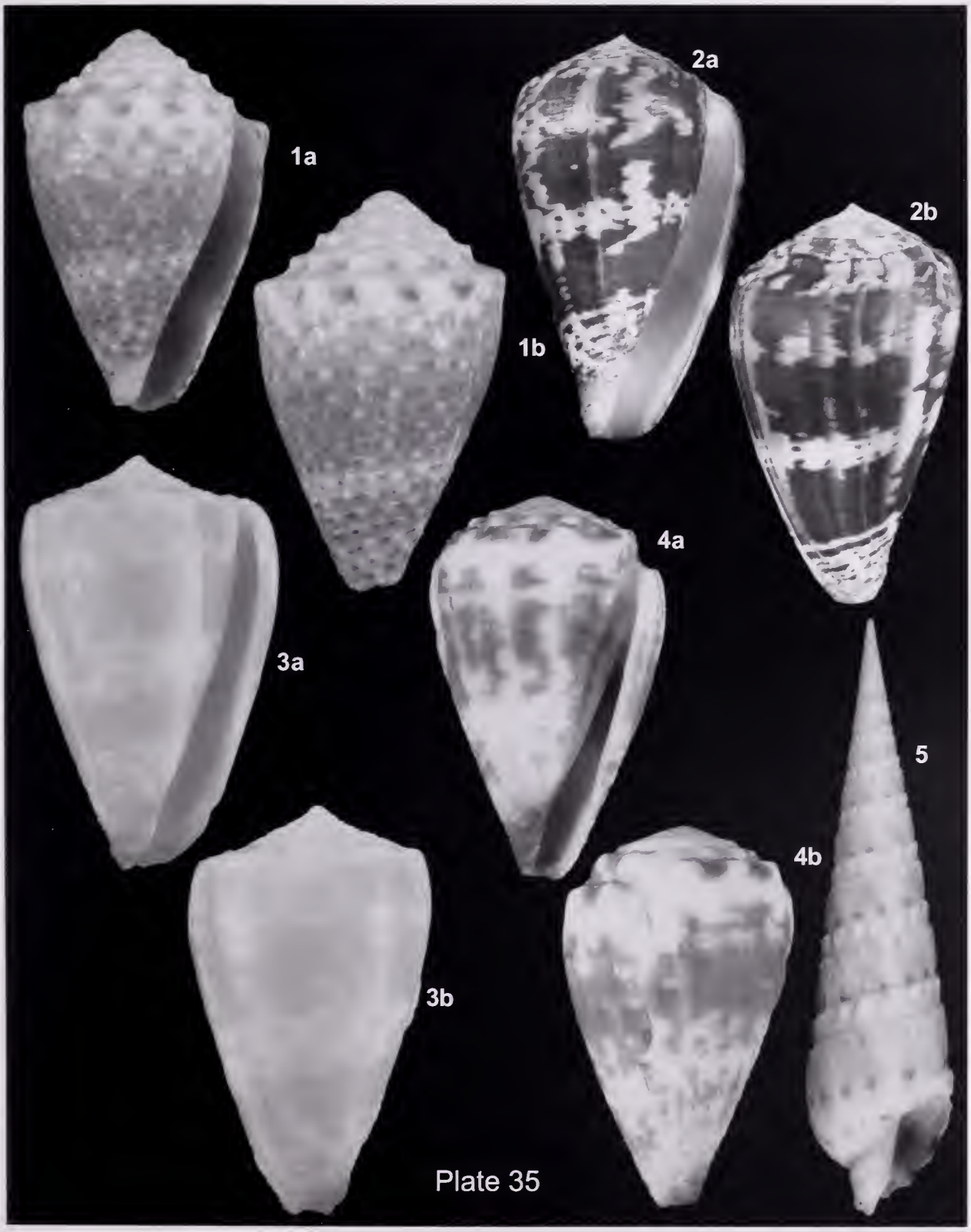
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Plate 35

Plate 36

Figures 1a, 1b *Clathurella rigida* (Hinds, 1843).
Île Clipperton, (10°18'17"N, 109°11'52"W), empty shell, dead *Pocillopora* sp. shakings, 9-15 m (30-50 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-14-94), diving from M/V *Royal Star*, 18 Apr. 1994. KLK Coll. 201161. Size: 4.3 mm. Photographs by P. Sadeghian.

Figure 2 *Kurtziella plumbea* (Hinds, 1843).
Île Clipperton, (10°18'58"N, 109°13'02"W) N side, empty shell, dead coral head shakings, 9-30 m (30-99 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-14-98), diving from R/V *Urracá*, 29 Apr. 1998. KLK Coll. 201163. Size: 5.8 mm. Photograph by P. Sadeghian.

Figure 3 *Microdaphne trichodes* (Dall, 1919).
Île Clipperton, (10°19.219'N, 109°13.394'W) SW side, empty shell, turnable dead coral in sand, SCUBA, suction, 55 m (180 ft), H_2O 80°F, leg. Bouchard, Albenga, Dugrais (ICF-007-05), Jean-Louis Etienne Expedition, 20 Jan. 2005. KLK Coll. 210335. Size: 3.3 mm. Photograph by P. Sadeghian.

Figures 4a, 4b *Microdaphne trichodes* (Dall, 1919).
Île Clipperton, (10°17.159'N, 109°13.247'W), empty shell, dead *Pocillopora* sp. shakings, 11-17 m (36-56 ft), H_2O 82°F, leg. K.L. Kaiser, diving from M/V *Royal Star*, 15 Apr. 1994. KLK Coll. 210043. Size: 2.4 mm (SEMs by D.L. Geiger).

Figures 5a, 5b Turridae sp. 1.
Île Clipperton, (10°19.01'N, 109°13.76'W) SW side, empty shell, turnable dead coral in sand, SCUBA, suction, 17 m (56 ft), H_2O 80-82°F, leg. Bouchard, Albenga (ICF-038JLE-05), Jean-Louis Etienne Expedition, 28 Jan. 2005. KLK Coll. 210336. Size: 2.5 mm (SEMs by D.L. Geiger).

Figure 6a, 6b Turridae sp. 2.
Île Clipperton, (10°18'52"N, 109°12'27"W) N-NE end, empty shell, dead coral in sand, shakings, 8-21 m (25-70 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-15-98), diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 201208. Size: 5.92 mm (SEMs by D.L. Geiger). Debris showing in aperture. Partial protoconch.

Figures 7a, 7b, 7c *Omalogyra* sp. 1.
Île Clipperton, (10°17'41"N, 109°12'02"W) E side, empty shell, shakings of dead coral, 14-27 m (45-90 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-17-98), diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 201164. Size: Figure 7a-b = 469 µm, Figure 7c = 508 µm (SEMs by D.L. Geiger). Debris showing in aperture.

Plate 36

Plate 37

Figures 1a, 1b, 1c, 1d *Heliacus mazatlanicus* Pilsbry & Lowe, 1932.
Île Clipperton, (10°16'56"N, 109°12'53"W) S-SE end, empty shell, dead coral head shakings, 11-15 m (35-50 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-4-98), diving from R/V *Urracá*, 21 Apr.-5 May 1998. KLK Coll. 201172. Size: 5.9 mm (SEMs by D.L. Geiger). Photographs 1b and 1d by P. Sadeghian.

Figures 2a, 2b, 2c, 2d *Heliacus* sp. 1.
Île Clipperton, (10°18'08"N, 109°14'06"W), live, steep slope of *Pocillopora* spp., shakings, 12-15 m (40-49 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-21-94), diving from M/V *Royal Star*, 20 Apr. 1994. KLK Coll. 201175. Size: 3.3 mm (SEMs by D.L. Geiger).

Figures 3a, 3b, 3c, 3d Architectonicidae sp. 1.
Île Clipperton, (10°19.219'N, 109°13.394'W) SW side, empty shell, turnable dead coral in sand, SCUBA, suction, 55 m (180 ft), H_2O 80°F, leg. Bouchard, Albenga, Dugrais (ICF-007-05), Jean-Louis Etienne Expedition, 20 Jan. 2005. KLK Coll. 210344. Size: 2.0 mm (SEMs by D.L. Geiger).

Figures 4a, 4b Architectonicidae sp. 2.
Île Clipperton, (10°19.219'N, 109°13.394'W) SW side, empty shell, turnable dead coral in sand, SCUBA, suction, 55 m (180 ft), H_2O 80°F, leg. Bouchard, Albenga, Dugrais (ICF-007-05), Jean-Louis Etienne Expedition, 20 Jan. 2005. KLK Coll. 210345. Size: 4.0 mm (SEMs by D.L. Geiger).

Figures 5a, 5b Architectonicidae sp. 3.
Île Clipperton, (10°19.219'N, 109°13.394'W) SW side, empty shell, turnable dead coral in sand, SCUBA, suction, 55 m (180 ft), H_2O 80°F, leg. Bouchard, Albenga, Dugrais (ICF-007-05), Jean-Louis Etienne Expedition, 20 Jan. 2005. KLK Coll. 210346. Size: 2.8 mm (SEMs by D.L. Geiger).

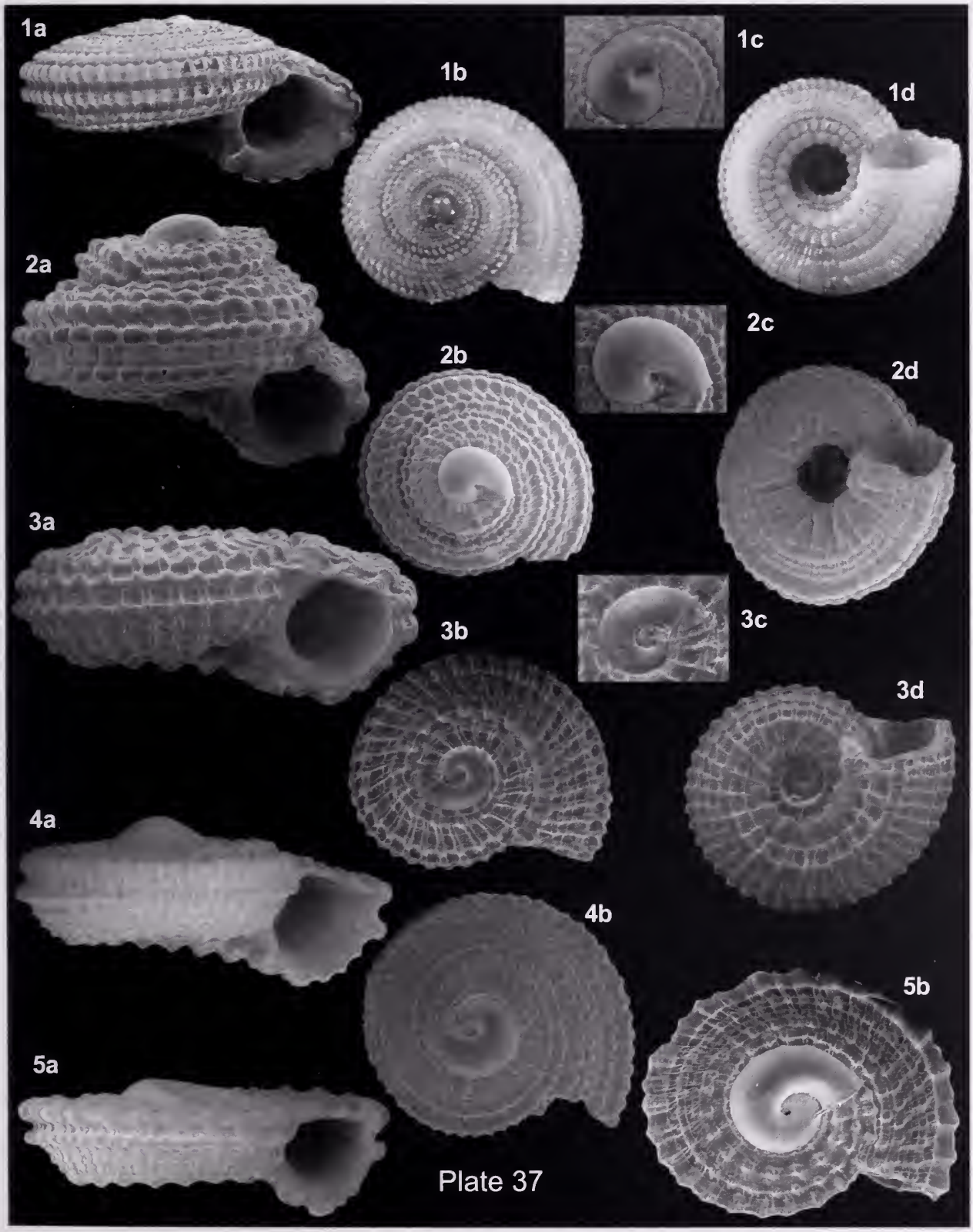
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Plate 37

Plate 38

Figures 1a, 1b *Iselica kochi* Strong & Hertlein, 1939.
Île Clipperton, (10°17'10"N, 109°13'15"W), empty shell, dead *Pocillopora* sp. shakings, 11-17 m (33-56 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-4-94), diving from M/V *Royal Star*, 15 Apr. 1994. KLK Coll. 201178. Size: 1.0 mm (SEMs by D.L. Geiger).

Figures 2a, 2b cf. *Iselica* sp. 1.
Île Clipperton, (10°17'39"N, 109°12'01"W), empty shell, coral sp. shakings, 9-14 m (30-46 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-36-94), diving from M/V *Royal Star*, 26 Apr. 1994. KLK Coll. 201177. Size: 0.85 mm (SEMs by D.L. Geiger). Debris showing in aperture.

Figures 3a, 3b *Odostomia* sp. 1.
Île Clipperton, (10°17'17"N, 109°12'01"W), live, dead *Porites* sp. shakings, 11-17 m (33-56 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-16-94), diving from M/V *Royal Star*, 19 Apr. 1994. KLK Coll. 201186. Size: 2.25 mm (SEMs by D.L. Geiger). Operculum showing in aperture.

Figures 4a, 4b *Chrysallida limbaughi* (Hertlein & Allison, 1968).
Île Clipperton, (10°18'17"N, 109°11'52"W), live, coral rubble demolition, shakings, 11-17 m (33-56 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-13-94), diving from M/V *Royal Star*, 18 Apr. 1994. KLK Coll. 201180. Size: 1.50 mm (SEMs by D.L. Geiger). Operculum showing in aperture.

Figures 5a, 5b *Herviera gliriella* (Melvill & Standen, 1896).
Île Clipperton, (10°18.727'N, 109°12.235'W) NE side, empty shell, turnable dead coral in sand, SCUBA, shakings, 13-14 m (43-46 ft), H_2O 78-80°F, leg. K.L. Kaiser (ICF-016-05), Jean-Louis Etienne Expedition, 24 Jan. 2005. KLK Coll. 210352. Size: 1.5 mm (SEMs by D.L. Geiger).

Figure 6 *Miralda* sp. 1.
Île Clipperton, (10°19'08"N, 109°13'10"W) N side, empty shell, shakings of dead coral, 12-29 m (40-95 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-16-98), diving from R/V *Urracá*, 30 Apr. 1998. KLK Coll. 201185. Size: 1.53 mm (SEM by D.L. Geiger). Protoconch missing.

Figures 7a, 7b Odostomiinae sp. 1.
Île Clipperton, (10°17'29"N, 109°13'32"W) S end landing site, empty shell, dead coral shakings, 9-27 m (30-90 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-3-98), diving from R/V *Urracá*, 23 Apr. 1998. KLK Coll. 201198. Size: 0.88 mm (SEMs by D.L. Geiger). Debris showing in aperture. Voucher specimen lost.

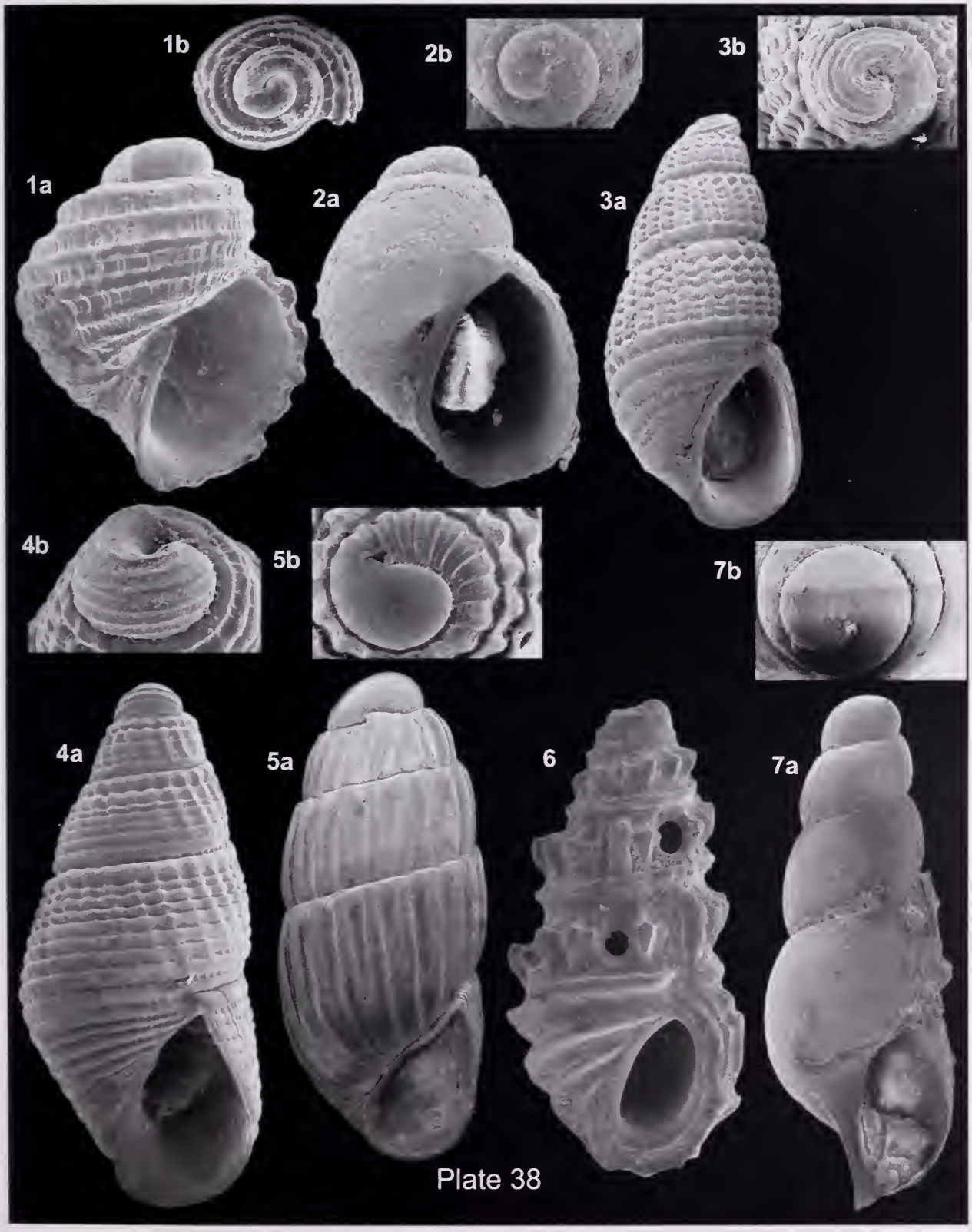
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Plate 38

Plate 39

Figures 1a, 1b Odostomiinae sp. 2.
Île Clipperton, (10°18'17"N, 109°11'52"W), live, dead *Pocillopora* sp. shakings, 9-15 m (30-50 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-14-94), diving from M/V *Royal Star*, 18 Apr. 1994. KLK Coll. 201195. Size: 733 µm (SEMs by D.L. Geiger).

Figures 2a, 2b, 2c *Turbonilla clippertonensis* Hertlein & Allison, 1968.
Île Clipperton, (10°19'13"N, 109°14'06"W) NW corner, ?live, tangle net, sand, coralline algae (lithothamnion nodules, 4-10 cm), 63 m (206 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-2-98), R/V *Urracá*, 4 May 1998. KLK Coll. 201188. Size: 1.40 mm (SEMs by D.L. Geiger).

Figures 3a, 3b Pyramidellidae sp. 1.
Île Clipperton, (10°19'00"N, 109°12'00"W) N end, empty shell, dead coral shakings, 9-15 m (30-50 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-1-98), diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 201197. Size: 1.78 mm (SEMs by D.L. Geiger).

Figures 4a, 4b, 4c *Orbitestella* sp. 1.
Île Clipperton, (10°19'13"N, 109°14'06"W) NW corner, live, tangle net, sand and coralline algae (lithothamnion nodules, 4-10 cm), 63 m (206 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-2-98), R/V *Urracá*, 4 May 1998. KLK Coll. 201199. Size: 1.53 mm (SEMs by D.L. Geiger). Debris showing in aperture.

Figures 5a, 5b *Cavolinia uncinata* (Rang, 1829).
Île Clipperton, (10°17.507'N, 109°3.555'W) S side, empty shell, turnable dead coral in sand, SCUBA, shakings, 15-20 m (49-66 ft), H_2O 80°F, leg. K.L. Kaiser (ICF-011-05), Jean-Louis Etienne Expedition, 22 Jan. 2005. KLK Coll. 210357. Size: 7.0 mm (SEMs by D.L. Geiger).

Figure 6 *Cavolinia tridentata* (Niebuhr, 1775).
Île Clipperton, (10°19.219'N, 109°13.394'W) SW side, empty shell, turnable dead coral in sand, SCUBA, suction, 55 m (180 ft), H_2O 80°F, leg. Bouchard, Albenga, Dugrais (ICF-007-05), Jean-Louis Etienne Expedition, 20 Jan. 2005. KLK Coll. 210358. Size: 2.6 mm (SEM by D.L. Geiger).

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Plate 39

Plate 40

Figure 1 *Diacria* cf. *quadridentata quadridentata* (Blainville, 1821).
Île Clipperton, (10°19.219'N, 109°13.394'W) SW side, empty shell, turnable dead coral in sand, SCUBA, suction, 55 m (180 ft), H_2O 80°F, leg. Bouchard, Albenga, Dugrais (ICF-007-05), Jean-Louis Etienne Expedition, 20 Jan. 2005. KLK Coll. 210364. Size: 1.7 mm (SEM by D.L. Geiger). Debris in aperture.

Figure 2 *Diacria* sp. 1.
Île Clipperton, (10°19.219'N, 109°13.394'W) SW side, empty shell, turnable dead coral in sand, SCUBA, suction, 55 m (180 ft), H_2O 80°F, leg. Bouchard, Albenga, Dugrais (ICF-007-05), Jean-Louis Etienne Expedition, 20 Jan. 2005. KLK Coll. 210365. Size: 3.5 mm (SEM by D.L. Geiger).

Figure 3 *Limacina inflata* (d'Orbigny, 1836).
Île Clipperton, (10°17'41"N,109°12'02"W) E side, empty shell, under dead coral heads, shakings, 14-27 m (45-90 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-17-98), diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 200319. Size: 1.3 mm (SEM by D.L. Geiger).

Figure 4 *Limacina bulimoides* (d'Orbigny, 1836).
Île Clipperton, (10°17'29"N,109°13'32"W) S end, empty shell, under dead coral heads, shakings, 9-27 m (30-90 ft), H_2O 84°F, leg. K.L. Kaiser (ICF-3-98), diving from R/V *Urracá*, 21 Apr. 1998. KLK Coll. 200428. Size: 1.2 mm (SEM by D.L. Geiger).

Figures 5a, 5b *Berthella* sp. 1.
Île Clipperton, (10°17'41"N, 109°12'02"W) E side, empty shell, dead coral head shakings, 14-27 m (45-90 ft), leg. K.L. Kaiser (ICF-17-98), diving from R/V *Urracá*, 21 Apr.-5 May 1998. KLK Coll. 201242. Size: 1.26 mm (SEMs by D.L. Geiger).

Figures 6a, 6b *Berthella* sp. 2.
Île Clipperton, (10°19.01'N, 109°13.76'W) SW side, empty shell, turnable dead coral in sand, SCUBA, suction, 17 m (56 ft), H_2O 80-82°F, leg. Bouchard, Albenga (ICF-038JLE-05), Jean-Louis Etienne Expedition, 28 Jan. 2005. KLK Coll. 210372. Size: 2.1 mm. (SEMs by D.L. Geiger).

Figures 7a, 7b *Berthellina* sp. 1.
Île Clipperton, (10°17'17"N, 109°12'01"W), empty shell, large dead *Porites* sp. shakings, 15 m (50 ft), H_2O 83°F, leg. K.L. Kaiser (ICF-15-94), diving from M/V *Royal Star*, 19 Apr. 1994. KLK Coll. 200256. Size: 3.96 mm. (SEMs by D.L. Geiger).

Figures 8a, 8b *Berthellina* sp. 2.
Île Clipperton, (10°18.757'N, 109°12.029'W) NE side, empty shell, turnable dead coral in sand, SCUBA, shakings, 5-45 m (16-147 ft), H_2O 78-80°F, leg. K.L. Kaiser (ICF-019-05), Jean-Louis Etienne Expedition, 26 Jan. 2005. KLK Coll, 210373. Size: 7.3 mm. (SEMs by D.L. Geiger).

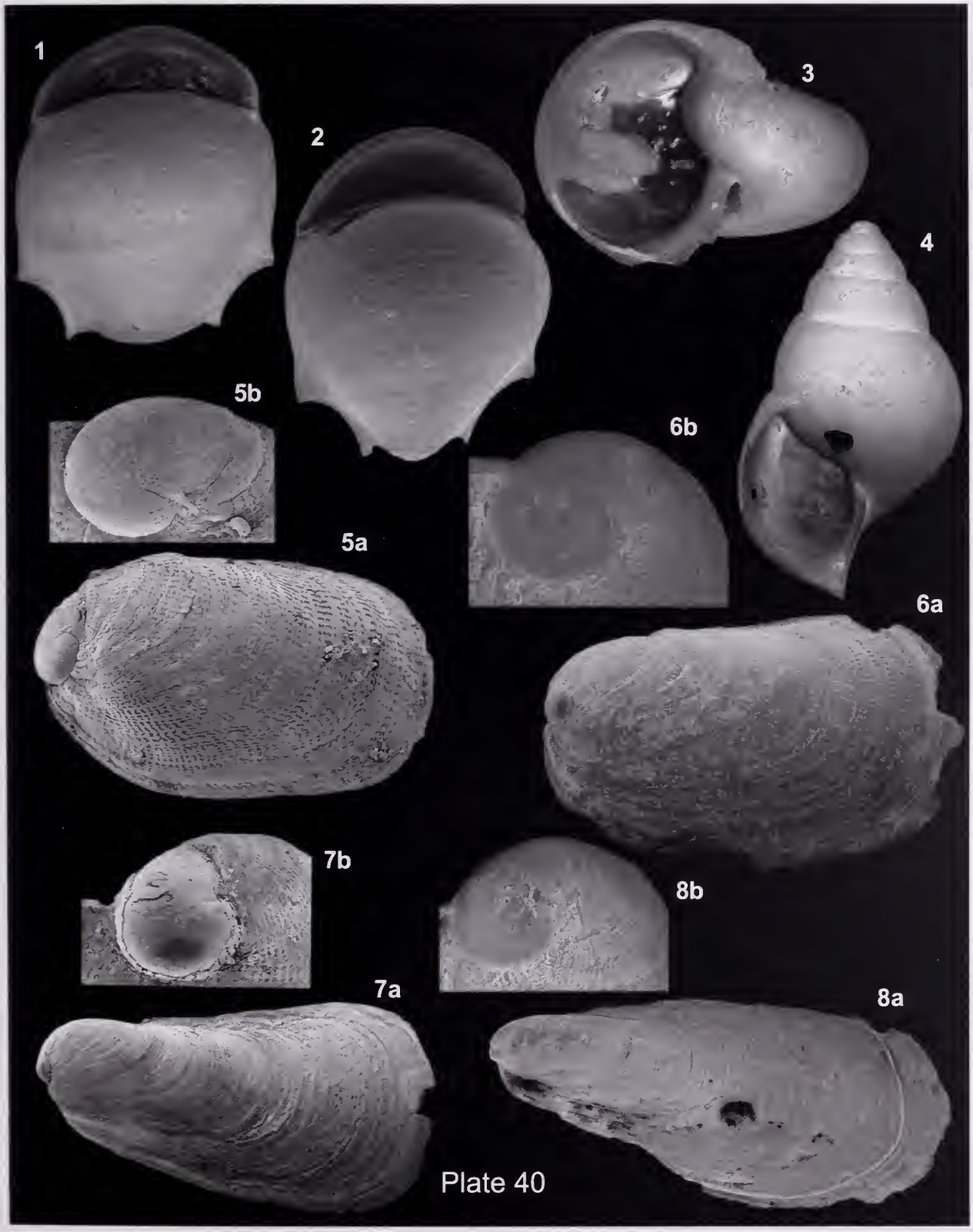
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Plate 40

Plate 41

Figures 1a, 1b *Tylodina fungina* Gabb, 1865.
Île Clipperton, (10°19'22"N, 109°13'38"W), empty shell, among coral heads and sand, H_2O 80-82°F, leg. K.L. Kaiser et. al. (ICF-016JLE-05), Jean-Louis Etienne Expedition, 19 Jan. 2005, 55 m (180 ft). KLK Coll. 210041. Size: 10.1 mm (SEMs by D.L. Geiger).

Figure 2 *Tylodina fungina* Gabb, 1865.
Laguna Beach, Orange County, California, USA, live collected. SBMNH 07243. Size: 14.4 mm (large), 6.1 mm (small). Photograph by P. Sadeghian.

Figure 3 *Succinea atollica* Hertlein & Allison, 1968.
Île Clipperton, (10°18'00"N, 109°12'00"W), empty shell, leg. C.R. Harbison, Sept. 1958. LACM 106665. Size: 10.7 mm. Photograph by P. Sadeghian.

Figure 4 *Opeas oparanum* (Pfeiffer, 1846).
Île Clipperton, (10°18'00"N, 109°12'00"W) N side, empty shell, off outer edge of reef flat, 6-8 m (20-26 ft). Sta. B-6100, Sept. 1958, leg. E.C. Allison. LACM 58-7. Size: 7.1 mm. Photograph by P. Sadeghian.

Figures 5a, 5b, 5c *Incertae Sedis* Gen. sp. 1.
Île Clipperton, (10°18'56"N, 109°12'52"W), empty shell, turnable dead coral, shakings, 11-22 m (36-72 ft), H_2O 83-84°F, leg. K.L. Kaiser (ICF-24-94), diving from M/V *Royal Star*, 22 Apr. 1994. KLK Coll. 201212. Size: w. 550 µm, h. 400 µm (SEMs by D.L. Geiger).

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Plate 41

Plate 42

Figure 1 *Navanax aenigmaticus* (Bergh, 1894).
Île Clipperton, (10°18'00"N, 109°12'00"W) N side, off outer edge of reef flat, 6-8 m (20-26 ft), leg. H.W. Chaney, diving from M/V *Royal Star*, April 1994. CASIZ 98775. Photograph by H. W. Chaney.

Figure 2 *Stylocheilus striatus* (Quoy & Gaimard, 1824).
Île Clipperton, (10°18'00"N, 109°12'00"W) N side, found on underside of coral plate, off outer edge of reef flat, 6-8 m (20-26 ft), leg. A. Hermosillo, diving from M/V *Nautilus Explorer*, 16 Apr. 2007. Photograph by A. Hermosillo.

Figure 3 *Berthella martensi* (Pilsbry, 1896).
Île Clipperton, (10°18'00"N, 109°12'00"W) N side, found on underside of coral plate, off outer edge of reef flat, 20 m (66 ft), Jean-Louis Etienne Expedition, Jan. 2005, leg. K.L. Kaiser. Photograph by L. Albenga.

Figure 4 *Berthellina ilisima* (Marcus & Marcus, 1967).
Île Clipperton, (10°19.347'N, 109°13.666'W), found on underside of coral, off outer edge of reef flat, 18 m (60 ft), H_2O 82-84°F, leg. A. Hermosillo, diving from M/V *Nautilus Explorer*, 16 Apr. 2007. Photograph by A. Hermosillo.

Figure 5 *Elysia flava* Verrill, 1901.
Île Clipperton, (10°17.400'N, 109°13.430'W), found on underside of coral with algae, 14 m (45 ft), H_2O 82-84°F, leg. A. Hermosillo, diving from M/V *Nautilus Explorer*, 17 Apr. 2007, LACM 174195. Photograph by A. Hermosillo.

Figure 6 *Elysia* sp. 1.
Île Clipperton, (10°17.540'N, 109°13.685'W), found on underside of coral with algae, 15 m (50 ft), H_2O 84°F, leg. A. Hermosillo, diving from M/V *Nautilus Explorer*, 16 Apr. 2007, LACM 174194. Photograph by A. Hermosillo.

Figure 7 *Hypselodoris ghiselini* Bertsch, 1978.
Île Clipperton, (10°17.139'N, 109°13.275'W), found on underside of coral, 14 m (45 ft), H_2O 82-84°F, leg. A. Hermosillo, diving from M/V *Nautilus Explorer*, 18 Apr. 2007, LACM 174196. Photograph by A. Hermosillo.

Figure 8 *Dendrodoris albobrunnea* Allen, 1933.
Île Clipperton, (10°17.180'N, 109°12.515'W), found on underside of coral, 17 m (55 ft), H_2O 82-84°F, leg. A. Hermosillo, diving from M/V *Nautilus Explorer*, 19 Apr. 2007, LACM 174190. Photograph by A. Hermosillo.

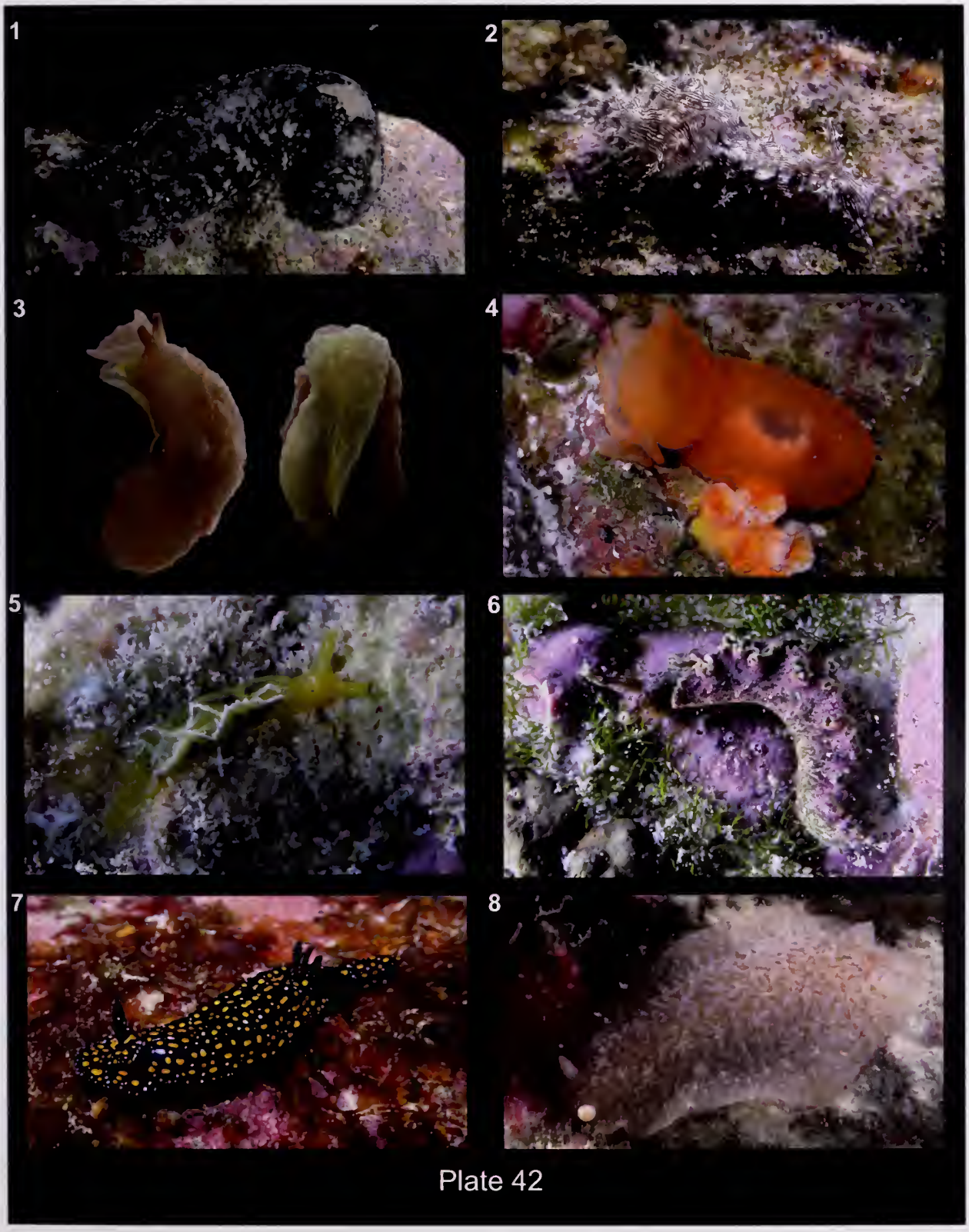

Plate 42

Plate 43

Figure 1 *Dendrodoris nigra* (Stimpson, 1855).
Île Clipperton, (10°17.540'N, 109°13.685'W), found on underside of coral, 19 m (62 ft), H_2O 82-84°F, leg. A. Hermosillo, diving from M/V *Nautilus Explorer*, 16 Apr. 2007, LACM 174192. Photograph by A. Hermosillo.

Figure 2 *Flabellina* sp. 1.
Île Clipperton, (10°17.249'N, 109°13.361'W), found on underside of coral, 14 m (45 ft), H_2O 82-84°F, leg. A. Hermosillo, diving from M/V *Nautilus Explorer*, 18 Apr. 2007, LACM 174193. Photograph by A. Hermosillo.

Figure 3 *Facelina* sp. 1.
Île Clipperton, (10°17.139'N, 109°13.275'W), living on hydroid sp. attached to black coral detritus on muddy sand and rubble slope, 70-90 m (230-295 ft). leg. J.E. Bozanic (D3891), diving from M/V *Nautilus Explorer*, 18 Apr. 2007, LACM 174197. Photograph by A. Hermosillo.

Figure 4 *Facelina* sp. 2.
Île Clipperton, (10°17.139'N, 109°13.275'W), living on hydroid sp. attached to black coral detritus on muddy sand and rubble slope, 70-90m (230-295 ft). leg. J.E. Bozanic (D3891), diving from M/V *Nautilus Explorer*, 18 Apr. 2007, LACM 174198. Photograph by A. Hermosillo.

Figure 5 *Anteaeolidiella indica* (Bergh, 1888).
Île Clipperton, (10°17.139'N, 109°13.275'W), found on underside of coral, 15 m (50 ft), H_2O 82-84°F, leg. A. Hermosillo, diving from M/V *Nautilus Explorer*, 18 Apr. 2007. Photograph by A. Hermosillo.

Figure 6 *Melanella* sp.
Île Clipperton, (10°18'00"N, 109°12'00"W) N side, living on the synapted cucumber *Euapta godeffroyi* under coral plate on outer edge of reef flat, 10-20 m (33-66 ft), leg. H.W. Chaney, diving from M/V *Royal Star,* April, 1994. Photograph by H.W. Chaney.

Figure 7 *Ischnochiton victoria* Ferreira, 1987.
Île Clipperton, (10°17'28"N, 109°12'03"W) SE side, off outer edge of reef flat, 10-20 m (33-66 ft), leg. H.W. Chaney, diving from M/V *Royal Star,* April, 1994, SBMNH 358702 wet coll. Size: 4.0 mm. Photograph by H.W. Chaney.

Figure 8 *Ischnochiton* cf. *victoria* Ferreira, 1987.
Île Clipperton, (10°17'28"N, 109°12'03"W) SE side, off outer edge of reef flat, 10-20 m (33-66 ft). leg. H.W. Chaney, diving from M/V *Royal Star,* April, 1994. SBMNH 358702 wet coll. Size: 3.8 mm. Photograph by H.W. Chaney.

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